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THE GRADUATE TEACHING OF OTOLARYNGOLOGY *

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To the members of this section, I wish first to express my sincere gratitude for the honor conferred on me in making me your chairman. I know full well the greatness of the otolaryngologists who have preceded me. While I cannot equal them in ability, I can excel them in estimating the honor bestowed on me. I shall do everything within my power to continue the excellent work of this section.

This session is the Victory Meeting of the American Medical Association. It would be impossible in the brief time allotted even to mention the salient features of the work of members of this section which helped to secure this victory. No other branch of medicine was better administered than otolaryngology; no other was more efficacious in saving the lives of our soldiers; certainly no other did better work in helping in the prevention of contagious diseases. At no time in the history of medicine have the infections of the respiratory tract played such an important part in connection with epidemics. We can well be proud of the work done along these lines by the members of this section. Never shall we cease to honor those of us who gave up everything, and whose work has resulted in such a great credit to us. This work has not been done without the greatest sacrifice. Because of the loss of those who have made the supreme sacrifice, the scientific work of the section will suffer. More than this, the profession of otolaryngology lost some of its leaders who always stood for what was righteous. To me it has seemed impossible that the morale of our specialty should not be affected by the death of these men. It is our duty to remember what they stood for, and see that the ideas which they exemplified in their daily life shall be continued. This is the least we can do to show our appreciation of their sacrifice. Unconsciously we shall honor them forever.

Because of the loss to us of one whose life work has been the development of graduate teaching of the head specialties, I am inclined to make this the subject of this brief address. The work of the late Col. Frank C. Todd had more to do with the advance of the graduate teaching of the head specialties along proper lines than that of any other man in our profession. The work which he began we should not allow to cease. Let us honor him by continuing this great work.

The reconstruction work of the medical service of the army and navy along the lines of otolaryngology will be carried out with all thoroughness by the members of this section.

EDUCATION OF THE OTOLARYNGOLOGIST

The next most important thing to us during the period of readjustment is the question of education of the otolaryngologist.

The undergraduate teaching of otolaryngology can be dismissed with a few words. Its function is to make the medical student conversant with otolaryngology to such an extent that he will know those things that are essential for general diagnosis and therapy.

A second no less important function is to convince the student that work in the otolaryngologic field is so specialized that it should be attempted only by those specially prepared.

The time allowed for undergraduate teaching of otolaryngology is barely sufficient to accomplish these two things. This matter, however, has been taken out of our hands by the Association of American Medical Colleges.

The teaching of graduate otolaryngology, however, is at this time in your hands. The Association of American Colleges is now considering this question of the graduate teaching of this and other branches, and I believe it wise for you to make definite recommendations soon regarding our specialty. I believe any definite recommendations that are made will help materially in solving the problem.

The experiences during the war indicate the necessity of standardizing the requirements for the practice of otolaryngology.

Brigadier-General Munson[1] has reported that at Camp Greenleaf, of those claiming to be otolaryngologists, 70 per cent. were rejected as incompetent. This statement brings to our minds the thought that if the army in order to protect its men found it necessary to reject 70 per cent. of the so-called otolaryngologists, what possible way exists at this time for the laity to protect themselves? How can any one in a strange city, needing the services of an otolaryngologist, tell whether or not he is employing a competent one? This is a most important question and should have a decided bearing on the question of a degree indicating proficiency in otolaryngology.

General Munson also said:

> It must be emphasized that the medical officers who finally reached the medical training camps represented much better than the average of the medical profession of the country, for these candidates had been subjected to several processes of elimination. . . . A large proportion of the undesira-

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Munson, E. L.: The Needs of Medical Education as Revealed by the War, J. A. M. A. 72: 1050 (April 12) 1919.

bles of the medical profession were excluded from service and never reached a medical training camp. The latter, therefore, dealt with an already selected class. That this selected class presented still further professional deficiencies invites reflection on the part of all those in charge of medical education.

He stated that a large number of men actually practicing as specialists in this country, and generally accepted as such, are not duly qualified as the experts they are supposed to be. The latter point is one of special interest and concern to those interested in graduate and specialist education in this country.

In a general way it may be said that the general professional qualification of officers bears a close relation to the educational standard of the schools from which they graduate.

He further stated that in most instances in which a special knowledge was assumed, however, the student claimed to have been actually practicing a specialty.

We have no right to criticize these men. It is our fault that they were deficient in that we have not provided proper facilities for their education. We have not even indicated the length of time that should be devoted to attain proficiency in otolaryngology or the kind of work that should be done.

To overcome this lack of proper knowledge of otolaryngology in these officers, our own Dr. Thomas Harris was selected to establish a school for the teaching of this subject. The excellent work that he did requires no comment. The excellence of graduate work done in the army in otolaryngology is evidenced by numerous recent contributions to the literature of many of our younger men which are excellent research contributions—not merely citations of interesting cases.

Dr. James McKernon feels that many of the inefficient otolaryngologists were the product of short courses. In my own work I find a large number of men seeking advice regarding the study of otolaryngology who are stunned at the suggestion that they devote two or three years in preparation for the work, the impression being that only a few weeks are necessary. We should do something to correct this more or less universal opinion.

It is equally important to the standardizing of graduate work in otolaryngology to create some method of enforcing these standards. Unless the American Association of the State Licensing Boards should become interested in this subject, it will be a very difficult thing to do. The least we can do is to indicate to prospective otolaryngologists what constitutes proper preparation.

THINGS OF IMPORTANCE IN TEACHING

In the graduate teaching of otolaryngology, certain things are of importance. Most essential in the development of the specialist is for him to be so well prepared in general medicine that he will not overrate the importance of his specialty. One of the best things that can be said of a specialist is that he is a good internist. He must be so well versed in general medicine that he will feel the need of the services of the internist and other specialists constantly. He must not feel that because he has disease of the nasal sinuses, and a lesion of the optic nerve, the latter is necessarily the result of the former. His knowledge must be such that he will feel the necessity of reports from the internist, serologist, roentgenographer and others before he can render his patient the best service.

Norval Pierce[2] has said:

If I were called to tell what I considered the best thing in a medical sense that I got out of my experience at Camp Grant, I would say it is the realization of what efficient results may be obtained when medical experts really work together.

The same condition should come about during the educational period. As I view it, it is very essential for the student to do a large part of his work in hospitals where a large percentage of the special cases are seen by representatives from other departments, dermatology, neurology, psychiatry, internal medicine, general surgery, genito-urinary surgery, etc., and where he sees, as consultant, a large number of cases that logically belong to the other specialties. In this way only will he secure the proper point of view of a specialist.

The greatest danger in specialism, as I view it, is the fact that the specialist may become narrow, and see only his side of the medical problems. During the educational career, everything possible should be done to prevent this. In the seminar work, which should form such an important part of otolaryngologic teaching, fully one third of the topics considered should be borderline subjects, and not those treated in our special textbooks.

The clinical teacher in the fundamentals of graduate otolaryngology must be one who is willing to place the teaching first, and private practice second. The latter part of the work may be given by the great clinicians, who need not necessarily engage in the routine didactic work. The clinical man who teaches the fundamentals must carry out a regular routine work. I do not have reference to the laboratory subjects, anatomy, pathology, bacteriology, etc. Necessarily the courses in the branches must be systematic and complete.

The clinical teacher of the fundamentals of graduate laryngology should spend at least one half day with the student. He should have the regular ward walks; he should supervise the clinical charts; every case the student has in his care he should go over with him; he must conduct seminar work; he must teach thoroughly the diagnostic technic, and he should have these men assist him at the operating table, and then later supervise every move they may make when they are themselves operating. This is particularly a most laborious task. Naturally, no student should be allowed to attempt any operation until he has mastered it in the mortuary. What does the teacher get out of this work himself? I know of two things: First, nothing can influence him more favorably than constant association with a small group of graduate students, answering their questions, and discussing the problems not thoroughly understood today. The teacher who can satisfactorily answer all questions is indeed a rare man. Second, his clinic becomes a real scientific laboratory, and as a rule his charity patients are better diagnosed and treated than the average private patients.

The laboratory work can best be done in the laboratories of our medical schools and universities. Complete systematic courses in anatomy, pathology and bacteriology are essential. The laboratory and the fundamentals of clinical work should go hand in hand. The operative work in the necropsy room must be very thorough in order that no patient when operated on

2. Pierce, Norval: Annals Otol., Rhinol. & Laryngol. 27: 856 (Sept.) 1918.

shall get anything but the best possible result. The performance of operations on patients by students, not properly prepared and supervised, is a most inexcusable thing.

A man is better qualified for the practice of otolaryngology who has a thorough knowledge of the anatomy and pathology of the subject, with little clinical experience, than one who has had the clinical experience and little anatomy and pathology. Certainly a thorough foundation in anatomy and pathology is necessary. This work should be given by excellent teachers who command large salaries. Proper education in otolaryngology can be given only with a great financial loss to the institution giving it. The conditions necessary can best be met by our medical colleges and universities.

A DEGREE IN OTOLARYNGOLOGY

The establishment of a degree that will indicate to the layman proficiency in otolaryngology is a question that needs much investigation and thought. We should not hurry in this matter.

The report of the Committee on Undergraduate and Graduate Degrees of the Association of American Medical Colleges shows that, at this time by various institutions, several different degrees are given indicating proficiency in public health work. We should early establish a standard degree indicating proficiency in otolaryngology satisfactory to all schools. This can best be accomplished through the Association of Graduate Colleges of American Universities, and the Association of American Medical Colleges. The degree should be granted by the universities and medical schools. In no other way can it be standardized and kept on a high plane. This does not signify that all work should be done in the medical schools and universities. Both the medical schools and our special hospitals should be used for educational purposes. The school granting the degree must be conversant with and responsible for all work done in special hospitals. Credit may be given for work in absentia if done in special hospitals not associated with medical colleges.

The degree should be an earned degree. It should not be granted on a basis of examination alone. At present in various universities the degrees of M.S. and M.A. are given for one year's graduate work in medicine. These are secondary degrees, and as at present granted do not express proficiency in any line of medicine. We should avoid the use of these degrees to signify in any way proficiency in otolaryngology unless the requirements for the granting of the degrees should be greatly increased.

The degree of Ph.D. with the qualifying term, such as Ph.D. (otolaryngology), written in the diploma but not included in the title or degree conferred on the individual, meets with much approval. The Committee of the Association of American Medical Colleges, just mentioned, recommended that the degree of Ph.D. with or without specification of the field of study be conferred for research work done in any of the fields of medicine when under the auspices of and approved by graduate schools of equal standing with those in the Association of American Universities.

The degree of Ph.D. is the highest earned degree. Three years of work is required for it. This is not too much work for those who wish to excel in otolaryngology. Our desire is not to make more otolaryngologists but better otolaryngologists.

This first degree gives the individual not only professional but scholarly standing. The length of time required to secure this degree should not be urged against requiring it, as after the individual has received his M.D. he can make his own way. Naturally, a prerequisite is an academic degree. Not all well prepared candidates for the Ph.D. degree will receive it; hence it seems advisable to grant a second degree signifying expertness in the art of otolaryngology without indicating research ability.

There is now existing a committee on undergraduate and graduate teaching of otolaryngology. This committee represents the American Laryngological Association, American Otological Association, this section of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology, and the Association of Laryngology, Rhinology and Otology. I would recommend that your representatives on this committee be urged to hasten a definite report regarding the graduate teaching of otolaryngology.

THE DIAGNOSIS OF CHRONIC PULMONARY TUBERCULOSIS *

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The recognition of chronic pulmonary tuberculosis is generally regarded as a simple matter in which there is slight chance of error. That this is not always the case is quickly recognized by any one who has the opportunity of studying a series of cases of advanced pulmonary disease. This study is based on our experience in the department for diseases of the chest of the Jefferson Hospital. In this department the dispensary handles all stages of tuberculosis, early and late, but only advanced cases are admitted to the wards. By admitting only these it seemed that we were making the best use of the beds in the effort to lessen infection by isolating patients in the advanced stages. Our admissions come from the general medical clinic and from the tuberculosis dispensary, but a considerable number are accepted on the diagnosis of other hospitals and general practitioners. We have no opportunity to study these cases until after admission. This study is made to check the correctness of the diagnosis of advanced pulmonary tuberculosis as made by many different members of the profession.

It may be asked what difference an error makes if the patient has some chronic disease. In some of the conditions, for example, bronchiectasis, it is evident that no great harm will be done; but, in others, valuable time may be lost and a condition left untreated which might be helped. Syphilis and the presence of a foreign body in the bronchus are examples of such a condition. In addition, such patients are occupying beds which might be more usefully employed. In discussing errors in diagnosis, we must realize that every one makes mistakes, and we should be charitable to the other man concerning those he makes, but very severe in judgment on our own. The important lesson is to try and reduce the number of errors in the future.

* From the Jefferson Medical College.
* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

This report is based on the study of 1,200 consecutive admissions, all the patients coming with a diagnosis of advanced pulmonary tuberculosis. In the series, seventy-two, or 6 per cent., were found to be nontuberculous. There is always a chance of error in a clinical diagnosis, but we have a check in the necropsy results. There were 134 necropsies in this series, and among these it was found that seven patients had been nontuberculous, 5.2 per cent., which is fairly close to the previous figure. Of these seven cases which came to necropsy and were found to be nontuberculous, in five we had made the correct diagnosis; but two went to necropsy with a diagnosis of tuberculosis in which we were in error. These cases are discussed later.

There is an interesting study by Ash[1] on the necropsy findings at the Boston Consumptives' Hospital. In 198 necropsies, twenty-three cases (11.6 per cent.) were found to be nontuberculous; seven of these had been correctly diagnosed before death. He collected a series of 353 necropsy cases from eight hospitals and found that thirty-eight (10.9 per cent.) of these were nontuberculous. The total of this report gives 551 necropsies with sixty-one nontuberculous cases (11 per cent.). The conditions found were: chronic cardiorenal, 27; pneumonic sequelae, 11; neoplasm, 7; aneurysm, 6; syphilis, 4; septicemia, 4; actinomycosis, 1; pellagra, 1.

In our series, the various conditions which were wrongly diagnosed as advanced pulmonary tuberculosis are: cardiorenal, 19; pneumonic sequelae, 9; bronchiectasis, 8; abscess of lung, 8; chronic bronchitis, 6; neoplasm, 5; syphilis, 4; aneurysm, 2; anthracosis, 2; bronchial asthma, 2; empyema, 2; diabetes mellitus, 1; cancer of rectum, 1; foreign body, 1; malingering, 1.

Seven of these came to necropsy (five with a correct diagnosis), the conditions found being: abscess, two cases; cardiorenal disease, two cases, and one each of aneurysm, neoplasm, and delayed resolution in lobar pneumonia. Of the two instances in which cases came to necropsy with a diagnosis of tuberculosis, one of the patients had had chronic lung abscesses, and the other, delayed resolution of a lobar pneumonia.

It is to be understood that there were cases in which these various diseases, with the exception of syphilis and neoplasm, were associated with tuberculosis. We have given only the number of cases in which an error in diagnosis had been made and tuberculosis was not present. The various groups are discussed in detail.

VARIOUS GROUPS

1. *Cardiac and Cardiorenal Disease* (nineteen cases).—These are cases in which a proper diagnosis might give a chance of benefit, in some cases, at any rate. The reasons for error are very evident, and first among them we must put careless or incomplete examination. These are the cases in which there is the least excuse for error. Failing health and strength, dyspnea, cough and the finding of râles in the chest were the features which were wrongly interpreted. A proper physical examination and a study of the sputum should prevent such mistakes. This group took first place in the series of instances collected by Ash. Of the cardiac cases it is of interest to note that fifteen were cases of mitral disease, in seven, mitral stenosis being present.

2. *Chronic Inflammatory Conditions in the Lungs, Usually Associated with Some Form of Pneumonic Process* (nine cases).—There was usually an associated general bronchitis. It is evident that in this group there are difficult problems, but it may be that because of this difficulty more care is taken. Of these cases, three proved to be unresolved lobar pneumonia, and six were atypical cases of bronchopneumonia. Case 1 is an example of lobar pneumonia in which we failed to make a correct diagnosis:

CASE 1.—W. G., a negro, aged 37, was admitted with a history of cough which for three months had become progressively worse. Three weeks prior to admission he was compelled to go to bed because of chilliness, fever and weakness. His cough became quite severe and was associated with blood-tinged sputum. His best weight was 175 pounds a year before, and for four months he had progressively lost weight until, on admission, he weighed 99 pounds. Examination showed an extremely sick, emaciated negro with signs of consolidation over the greater part of the right lung and scattered, crackling râles throughout both lungs. One sputum examination was negative. A clinical diagnosis of tuberculous pneumonia, in spite of the one negative sputum, was made, because it was thought that the finding of tubercle bacilli had perhaps been missed, but would show on future examinations. The patient died on the third day following admission.

The necropsy revealed the following nontuberculous changes: The right lung was solid except along the anterior margin and extreme apex of the upper lobe, anterior margin of the middle lobe, and a slight fringe at the bottom of the lower lobe. An incision of the organ showed surfaces that were gray, except a small portion of the apex and the base of the lower lobe; these areas were light red, with small, grayish mottlings. The gray areas were firm. The left lung was large, dark in color, and very soft, with decreased crepitation. The incised surface exuded an excess of frothy, blood-stained serum. The pathologic diagnosis (verified by histologic examination) was lobar pneumonia with gray hepatization of the right lung.

Several cases were instances of the slow-clearing basal pneumonia to which much attention has recently been drawn. The good rule that a basal process is rarely tuberculous is often forgotten. Case 2 is typical:

CASE 2.—E. S., a white woman, aged 24, referred with a diagnosis of advanced pulmonary tuberculosis, had lost about 25 pounds in the past year, and two weeks before she began to cough and spit blood. The temperature averaged from 102 to 103. There were signs of acute bronchitis, with many râles throughout both lungs. The resonance was impaired at both bases with suppressed breathing and numerous fine, crackling râles. Sputum examinations were repeatedly negative for tubercle bacilli. After one month her temperature became normal and remained so for another month, at the end of which time she had a febrile recurrence with the same symptoms and signs. The condition again cleared up in about four weeks, and the patient was discharged three months later free from symptoms and signs. During the first febrile period the following roentgen-ray findings were noted: There was a very dense area at the base of the right lung, probably unresolved pneumonia, and another extending from the second to the fourth rib anteriorly and the fifth and sixth posteriorly. The left base showed some clouding but not as extensive as on the right side. The apexes appeared fairly clear.

With regard to the subacute and chronic nontuberculous pulmonary infections, the composite clinical history of a group of these patients is about as follows:

1. Ash, J. E.: The Pathology of the Mistaken Diagnoses in a Hospital for Advanced Tuberculosis, J. A. M. A. 64: 11 (Jan. 2) 1915.

The patient has a cold with slight fever but continues at work, although he feels ill, or, in more severe cases, may be compelled to go to bed for a few days or a week. A diagnosis of bronchitis or influenza is made. A week or ten days after the onset the fever is less, although there may be an afternoon elevation between 99 and 100. The constitutional symptoms subside, but cough and expectoration continue and, in a few instances, there may be hemoptysis. Examination reveals a more or less constant localization of signs in the lower lobe, dulness, increased vocal fremitus, diminished breath sounds and many fine, crackling râles. Tubular breathing is seldom heard. The sputum examination is negative for tubercle bacilli, but usually shows a larger number of other organisms.

This group has been carefully studied, and the differential diagnosis rests, as Miller states, on the constant localization in a lower lobe, the absence of constitutional symptoms in the presence of extensive physical signs, the absence of tubercle bacilli, and the presence of the organisms of acute respiratory infections, the character of the roentgenogram, and the disappearance of signs and symptoms, in the majority of instances, far more quickly than would be possible in tuberculous lesions of similar extent.

It is of interest that most of our cases of this group came in during the past winter, and this is undoubtedly because of the influenza epidemic. Many errors of the nature described are to be made in the next few years if the experience of the last pandemic is any guide. In the nineties we learned by experience that there were many atypical pneumonias of long duration, sometimes apical, which were mistaken for tuberculosis. In many of these, the question of diagnosis is concerned with the possible lighting up of an old tuberculous process and, in this, the roentgen rays give little help in some cases. We would emphasize the value of time and repeated sputum examinations in making a correct diagnosis in this group.

3. *Bronchiectasis, Usually with Marked Fibrosis* (eight cases.)—It is easy to understand the reason for this error if the diagnosis is made on physical signs alone and the sputum is neglected. The study of the sputum should prevent mistakes. We have reported one of these cases[2] in which the patient had been in three tuberculosis sanatoriums with a diagnosis of advanced pulmonary tuberculosis.

4. *Pulmonary Abscess* (eight cases.)—Apparently the general features, fever, emaciation and sweating, with the signs in the lung, were relied on for diagnosis. The examination of the sputum was evidently neglected. Sputum which is persistently purulent and does not contain tubercle bacilli is strong evidence against tuberculosis. In one case of this group we made an error in diagnosis:

CASE 3.—J. D., a white man, aged 32, gave a history of pleurisy three years before, since which time he had a persistent cough with expectoration. Ten months previously he had been in a tuberculosis sanatorium. He had a pulmonary hemorrhage one week prior to admission. He had lost about 16 pounds in weight. He had not had chills or sweats, but had been feverish in the afternoon for some months. The examination disclosed, in addition to the signs of acute bronchitis, evidence of infiltration and cavity formation in the left lower lobe. The sputum examination was reported positive for tubercle bacilli. In spite of the basal character of the lesion, which our clinical sense told us was against tuberculosis, we made a diagnosis of tuberculosis on the sputum examination. The necropsy revealed a large cavity in the lower left lobe, the outer wall of which was the greatly thickened pleura. The cavity had a fairly distinct wall with a dilated bronchus opening into it. The nonadherent portion of the pleura was covered by a grayish exudate. There was no evidence of tuberculosis in either lung.

5. *Emphysema and Chronic Bronchitis* (six cases).—Reliance on symptoms and signs, together with neglect of proper sputum examination, is the explanation of errors in this group.

6. *New Growth* (five cases.)—The same remarks apply as in the two preceding groups. Error is due to lack of proper examination, especially of the sputum. An example is presented in Case 4:

CASE 4.—A. T., a white man, aged 40, was referred with the diagnosis of advanced pulmonary tuberculosis. He gave a history of onset one year before with cough, expectoration, hemoptysis, marked gastric symptoms, and loss of weight. The physical examination revealed marked emaciation, with signs in the chest indicative of consolidation of the upper half of the left lung and scattered râles throughout the entire pulmonary area. The sputum examinations were repeatedly negative. The Wassermann test was negative. A careful study of the history revealed the fact that the gastric symptoms were primary and had been quite marked since the onset. There had been pain after eating, vomiting of brownish material, etc. Examination of the abdomen revealed a small mass in the region of the pylorus which the roentgen ray confirmed as a pyloric tumor. The sputum examinations continued negative, and a diagnosis of secondary carcinoma of the lung was made.

7. *Syphilis* (four cases.)—With the present craze, in some quarters, to diagnose syphilis of the lung on rather slight evidence, the number of cases under this heading may seem small; but we are conservative in making this diagnosis. These cases seemed thoroughly proved, and the results of specific treatment were striking. An example is given:

CASE 5.—L. H., a colored woman, aged 27, referred by a general hospital with the diagnosis of advanced pulmonary tuberculosis with laryngeal involvement, gave a history of cough which, for two years, had gradually grown worse, and of expectoration which at times was blood tinged. During the two weeks before admission she had many small hemoptyses. She was weak and had lost a good deal of weight. In the past year she had been treated in a New York hospital for advanced tuberculosis. The physical signs and roentgen ray showed fairly marked bilateral pulmonary disease. The temperature usually rose to about 101 in the afternoon. The sputum was repeatedly negative for tubercle bacilli, and the laryngologist reported that the laryngeal ulceration seemed more like that due to syphilis than tuberculosis. The Wassermann test showed a strongly positive reaction. Following antisyphilitic treatment, the symptoms disappeared, the temperature fell rapidly to normal, the signs became less and, four years later, she is well and working.

8. *Aneurysm, Anthracosis, Bronchial Asthma* and *Empyema* (two cases of each).—In both cases of aneurysm the diagnosis, while suggested by symptoms and signs, was made positively only by the roentgen-ray examination. Anthracosis is regarded as tuberculosis much more commonly than these figures indicate, and many such cases sent to the hospital as tuberculosis were recognized in the dispensary and sent to the general wards; so they do not figure here With any care in sputum examinations, such an error should not be made. The cases of empyema were not

2. McCrae, Thomas, and Funk, E. H.: Bronchiectasis of the Upper Lobes, J. A. M. A. 67: 1060 (Oct. 7) 1916.

the ordinary type, but were interlobar and, while difficulty in the diagnosis is understood, sputum examinations would have prevented the error.

9. *Miscellaneous Cases* (one each of diabetes mellitus, cancer of the rectum, foreign body in a bronchus and malingering).—In the first two cases there was some cough, but little else in the way of signs even to suggest the diagnosis. The foreign body was a bullet in the bronchus, the diagnosis being made by the roentgen ray. In several other cases of foreign body which were sent for admission, suspicion was aroused and the patients were not admitted. This figure does not, therefore, give an accurate idea of the number of cases in which an erroneous diagnosis had been made. The malingerer was well up in the symptoms of the disease and was found to have scratched his throat to produce blood-streaked sputum. It was found that he had done this in other hospitals and had been regarded as tuberculous. His object was to evade the military draft.

COMMENT

What were the reasons for these errors? Lack of thorough examination, drawing hasty conclusions from symptoms and signs, and neglect of proper sputum examinations are probably the main causes. Many of these conditions result in loss of weight and strength with anemia, are accompanied by fever, and show signs in the lungs. The great safeguard is proper examination of the sputum. In any patient with marked signs in the lungs and a sputum negative for tubercle bacilli, suspicion of a diagnosis of pulmonary tuberculosis should be aroused at once. Too often a diagnosis is made and no thought given to proving it. How many negative sputum examinations are necessary before tuberculosis can be excluded? Six negative examinations are said to be enough, but we should suggest more than this.

The problem is very different from that concerned in the diagnosis of early pulmonary tuberculosis. Here we should endeavor to make the diagnosis before bacilli are found in the sputum; in the advanced form we should never make a diagnosis of tuberculosis unless tubercle bacilli are found. A word may be said as to verifying a positive result. Of the two cases in which we erred, one error was due to some mistake in the examination of the sputum. A positive result was reported but not confirmed. Either the specimens of sputum or the slides were mixed and a wrong report sent for that patient. There is a rule in the clinic that a positive diagnosis is not to be made on the result of one sputum examination. It must be confirmed. In this case it was not, and that led to error. Had we watched this point more carefully, we should not have had this error in the necropsy series. A positive sputum report is naturally regarded as giving a definite diagnosis; but it is easy to be careless and, in many laboratories, the slides are handled in such a way that a mistake is easily made. This is a point to which more attention should be given. Its possibility is suggested when patients come with a history of one positive and many negative examinations.

It will be noted that there is no mention of the mycotic infections. We have had these in mind as a possible source of error, but no instance occurred in the series so far as we could discover. In this connection, one comment may be made on the possibility of finding streptothrix which has come from the mouth. If a careful effort is made to clean the mouth thoroughly, the frequency of the occurrence of streptothrix in the sputum will be found to undergo a striking reduction.

The clinical errors in this series could have been prevented by more care and thoroughness. Some of the mistakes, as, for example, those in regard to the recognition of syphilis of the lung, or aneurysm, are readily made and, perhaps, not easy to avoid in the case of a man in general practice; but this cannot be said of the majority of mistakes. There is little excuse for the error made in diagnosing chronic cardiac disease or bronchitis as advanced pulmonary tuberculosis. One of our own errors was made through lack of attention in making sure that our rules as to sputum examinations were followed.

There is a lesson for sanatorium physicians. A number of these patients had been in tuberculosis sanatoriums and always regarded as tuberculous. This was the case with those patients, particularly, who had bronchiectasis. Some of them stated that a sputum examination had not been made, which is difficult to believe, but is supported by the fact that an incorrect diagnosis was made. In any institution dealing with patients with chronic disease, it requires constant effort not to rest content with a diagnosis once made. We are too likely to accept a diagnosis of advanced pulmonary tuberculosis as one not requiring special care to make, and, when once made, not needing revision. How many patients there are today wrongly regarded as having advanced tuberculosis, no one can say; but they are not few.

CONCLUSIONS

1. In a series of 1,200 consecutive cases admitted as advanced pulmonary tuberculosis, seventy-two (6 per cent.) were found to be incorrectly diagnosed.

2. Among 134 cases coming to necropsy, in seven (5.2 per cent.) the diagnosis with which the patients came to the hospital was incorrect, and in two of them the diagnosis was not corrected.

3. The conditions most frequently diagnosed incorrectly were: cardiac and cardiorenal disease (nineteen cases), chronic inflammatory conditions (nine cases), bronchiectasis (eight cases), pulmonary abscess (eight cases), and chronic bronchitis and emphysema (six cases).

4. The diagnosis of advanced pulmonary tuberculosis should not be made unless tubercle bacilli are found in the sputum on at least two examinations.

5. Physicians in tuberculosis sanatoriums and hospitals should take particular care to verify the diagnosis in all patients sent with a diagnosis of advanced pulmonary tuberculosis.

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ABSTRACT OF DISCUSSION

Dr. Leo Kessel, New York: It is difficult for most the men to understand the readiness with which the diagnosis is made in patients who are supposed to be suffering from advanced miliary tuberculosis. So much emphasis has been laid on the diagnosis of early tuberculosis that we have lost sight of the fact that it is just as easy to err in advanced cases. Dr. Funk has pointed out the conditions under which these patients are admitted. One of the most important features to lay stress on is the noninflammatory conditions. These patients usually apply for admission to a hospital between January and March. As a rule, they feel compara-

tively well in the summer. A large number of the patients afflicted with this illness have spent years at a sanatorium. They are discharged with the diagnosis of pulmonary tuberculosis, and when a particularly severe winter comes along, they are admitted to a hospital complaining of cough, sometimes also of dyspnea, etc. They are promptly admitted to a department or to a sanatorium. Careful examination of these patients has revealed that the predominating organisms are pneumococci and streptococci and practically all of the organisms are found in the lungs. The physical signs are almost always at the base. The great majority of patients presented signs at the left base, such as dulness, crepitation and diminished breathing. The patient may have fever, and some have bloody sputum, so that it is very easy to make a mistake in diagnosis. Dr. Funk laid stress on the importance of considering syphilis of the lung as one of the possibilities of mistaken diagnosis in these cases of extensive chest involvement. I believe that it has become a fad to make that diagnosis. We have had a large series of cardiorenal cases which were admitted as cases of tuberculosis, and some of these patients have aneurysm. They have pressure on the bronchus with cough, bloody expectoration and fever. A mistaken diagnosis has usually been made owing to the fact that the patients have not been observed with a reasonable degree of care. The other common mistake has been the error of overlooking new growths of the lung, both primary and secondary. We have had patients with metastatic growths of the lung from carcinoma of the prostate sent to us as advanced cases of pulmonary tuberculosis. The one point I should like to emphasize is the importance of careful examination of the sputum of all patients who present physical signs, and to avoid the immediate supposition that there is something wrong when there are signs in the chest.

DR. JOHN A. LICHTY, Pittsburgh: It is difficult to differentiate between chronic pulmonary tuberculosis and bronchiectasis, and mistakes in diagnosis are frequently made. The after effect of influenza on the lung is such as to simulate pulmonary tuberculosis. This must be borne in mind. Since this epidemic we have all had experience with cases which we would ordinarily diagnose as tuberculosis but which we now diagnose as influenzal lungs. Dr. Roland G. Curtis gave a series of lectures at Philadelphia in 1894 and 1895 in which he spoke of nonbacillary phthisis. Then we were not in the psychologic mood to accept that diagnosis because it was just after we had learned to stain the tubercle bacillus. Today we have exactly the same class of cases following this epidemic as followed the epidemic of 1889.

DR. F. M. POTTENGER, Monrovia, Calif.: We are missing chronic tuberculosis ten times more often than we are diagnosing other cases as chronic tuberculosis. The postinfluenzal cases are giving us much trouble. It is extremely difficult to determine whether or not a patient presents the results of a postinfluenzal pneumonia or whether it is a case of tuberculosis. To be sure, most of these postinfluenzal cases are basal, but I have seen several of these cases which were combined with tuberculosis. Foci are scattered through the lung that it is easy for influenza to stir up. On the other hand, influenza may localize at the apex of the lung just as well as at the base, and then we think it is tuberculosis. I see many cases of bronchiectasis that are diagnosed as tuberculosis. We cannot say that a negative sputum is not tuberculous. In these cases in which we find no bacilli and in which there is an extensive involvement, we can not say that the case is not one of tuberculosis. Also we find patients who have chronic tuberculosis, with healing, leaving a cavity containing secretion but no bacilli. As a rule, if these patients take cold, bacilli appear. Chronic pulmonary tuberculosis with an abscess in the center of an infiltrated area gives râles. Pulmonary bronchiectasis is of the same type. The tissue adjacent to the lesion may be the seat of a considerable fibrosis, and there will not be many râles. Consequently you will suspect a nontuberculous process in the absence of signs on auscultation. Very often a rhonchus is heard but the signs of acute pulmonary tuberculosis are rarely present.

DR. A. G. SHORTLE, Albuquerque, N. M.: I want to call attention to the importance of a Wassermann test in the diagnosis of chest cases. In my own work I found about 10 per cent. positives. I then compiled results of quite a number of other workers, and they averaged about 7.5 per cent. During the war I had to neglect this routine Wassermann, making Wassermanns only when the history or some uncertainty made it desirable, and I got only 3.5 per cent. positives. Four out of 1,300 cases is a very small percentage. If Dr. Funk had made routine Wassermanns he would have found that 7 or 8 per cent. had syphilis of the lung or syphilis as a complication.

DR. ELMER H. FUNK, Philadelphia: In regard to the postinfluenzal cases, we are going to be at a loss to classify patients who have cough and expectoration. The roentgen ray does not help us much. If this man has not had a previous influenza, I would be inclined to think that the shadow meant tuberculosis. If he has had influenza, he might have a lighting up of a tuberculosis, but the roentgen ray would not help us on that. If a man has a basal lesion, that is good evidence that it is not tuberculosis. In 134 consecutive necropsies on patients with tuberculosis, we have never yet found a single primary basal case; in every one, you could trace out the old lesion to the apex. So that when you get a basal lesion with clear apex, it is fairly good evidence that it is not tuberculosis. Neither can it be said that because the lesion is apical it is tuberculosis. We reported some cases of bronchiectasis without clubbing of the fingers and without fetid sputum. These patients suggested tuberculosis but they were negative for tubercle bacilli. Every now and then you will get an advanced tuberculous lesion which is closed, but the occurrence is rare.

THE RECOGNITION OF TROPICAL SPRUE IN THE UNITED STATES*

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There can no longer be any doubt of the existence of tropical sprue in the United States. While the majority of the cases are occurring in the Southern states, it is interesting to note that one of my series came from New Hampshire, one was seen in Syracuse (a Porto Rican case), and one came from the Johns Hopkins Hospital. It is evident, therefore, that a familiarity with its cardinal symptoms would be helpful to many more in the profession than those of us from the South.

In another communication[1] I attempted to collect all references in the literature to the occurrence of the disease in America. Since 1915, when that paper was written, the evidence has grown that the disease is by no means rare and that the cases are widely distributed. In North Carolina its occurrence is no longer a medical curiosity.

SYMPTOMS OF SPRUE

Sprue is characterized by three groups of symptoms: those of the mouth, the intestinal tract, and the blood.

The mouth symptoms have been painstakingly described by Sir Patrick Manson,[2] who divides them into seven subheads. His description is too full to allow of even an abstract here. My own observation leads me to avoid too fine a line of differentiation of these symptoms. Suffice it to say that the tongue is inflamed and pink, with congested fungiform papillae, eroded patches and superficial cracks on the dorsum

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* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Wood, E. J.: The Occurrence of Sprue in the United States, Am. J. M. Sc. **150**: 692 (Nov.) 1915; Tr. A. Am. Phys. **30**: 505, 1915.
2. Manson, Sir Patrick: Sprue or Psilosis, Allbutt's System of Medicine, Ed. 7, **3**: 774.

and edges. Crombie's molar ulcer is frequently mentioned as a helpful symptom, but I have observed it even more frequently in pellagra. The tongue in sprue is quite different from the tongue in pellagra. In the latter disease it will be found more pointed and not so flabby. In sprue, it is very much paler than in pellagra. There is also, in sprue, an approach to the cobblestone appearance which does not occur in pellagra. After a short experience with the two diseases, any observer may expect to make a correct differentiation by examining the tongue alone.

The diarrhea in sprue is the most distinctive symptom. The bowel movements occur from midnight until about 10 o'clock in the morning. There then occurs a cessation until the next day. If the cessation does not occur, there will be, at least, a marked diminution in the number of movements in the afternoon and early hours of the night. The bowel movements are very large, suggesting at once a pancreatic condition. The reaction is decidedly acid, and there is much gas mixed with the feces. Examination of the feces reveals a large amount of fat. The stools are light in color and give a positive reaction for hydrobilirubin. Pratt and Spooner,[3] with the Schmidt-Strassburger test diet, found a fat loss of 45 per cent. and a nitrogen loss of 15 per cent. P. H. Bahr,[4] in his Ceylon cases, found a fat absorption of from 70 to 90 per cent., which is much greater than was shown in our experience. In addition to this failure in the utilization of fat and nitrogen, there are other evidences of pancreatic insufficiency indicated by the thymus nucleus test and the Sahli glutoid salol capsule test.

The question of the relationship of the pancreas cannot be discussed here, but it is hoped that an interest in this fascinating problem may be aroused and that the material so close to hand may be utilized in the solution of an important problem. The difficulties of the problem are enhanced by a marked variation in the degree of pancreatic digestion, and also in the utilization of fat and nitrogen.

BLOOD PICTURE

The most interesting phase of the study of sprue at this time is the blood picture. In a large number of cases the color index is above 1, and a case now under observation gives a persistent index of 1.66. The anemia has always been regarded as secondary, and I have no wish to question this point; but it is important to show how the condition may be confused with pernicious anemia. I believe that many cases of sprue have been called pernicious anemia. On the other hand, some cases of pernicious anemia have been diagnosed as sprue. One such experience has befallen me.

In sprue I have noted the most marked variation in the size of the red cells. There was found in a recently studied case a decided preponderance of oversized cells, as well as numerous dwarf cells. There also occurs poikilocytosis. It was noted that there were many very pale cells in the field when the blood was stained with any of the eosinates of methylene blue. Stipple cells were very rarely found. In the case referred to above, in which the blood was carefully studied on different occasions in many slides, no nucleated red cells were found.

3. Pratt, J. H., and Spooner, L. H.: A Study of Sprue, J. A. M. A. **59**: 218 (July 20) 1912.
4. Bahr, P. H.: Tr. Soc. Trop. Med. and Hyg., London, 1914, p. 161.

Notes of a case now under observation will be briefly presented, chiefly on account of the blood picture.

REPORT OF CASE

Case.—Mrs. H., aged 37, the mother of three children, was married to a saw mill worker moving from point to point in North Carolina, and living under rather unfavorable hygienic conditions.

The present trouble is said to have begun at the birth of her third child in September, 1918. She denied ever having had any form of anemia before. Her physician's information was limited because of the fact of her moving about at short intervals from one saw mill to another. Following the birth of the third child she had a rather severe influenza and has never been well since.

Owing to a sore mouth and tongue, in addition to extensive pyorrhea, she was advised to have all her teeth removed, which she did.

Throughout the winter the diarrhea, which was of the matutinal character, and the anemia persisted. There seemed to have been only the very slightest variation in the severity of either symptom.

The physical examination was practically negative. The liver dulness was slightly reduced. The spleen was not palpable. The patient had lost some flesh.

The red blood count was 600,000; the hemoglobin, 20 per cent.; the color index, 1.66. No megaloblasts nor normoblasts were found on repeated examination of many slides. There were no stipple cells. There was a marked difference in the way in which the red cells took the stain. This was shown chiefly in numerous strikingly pale cells. There was a preponderance of oversized red cells, the percentage ranging from 25 to 30. The fragility test of the red cells with hypotonic salt solutions showed that hemolysis had begun at the 0.45 per cent. point and was complete at the 0.3 per cent. point. This we regarded as normal.

The white blood count was 3,200; polymorphonuclears, 40 per cent.; large lymphocytes, 16 per cent.; small lymphocytes, 44 per cent. No parasites of malaria were found. The blood Wassermann test was negative.

There was an absence of free hydrochloric acid in the stomach contents, and marked stasis.

The feces were light yellow, and were very acid in reaction. Crystals and droplets of fat were found on microscopic examination, after staining with sudan III. The beef nucleus test showed that while the nuclei of the muscle fibers were in great measure digested, there persisted nuclei which had not been completely digested. The agar tubes of Einhorn failed to give returns from which any conclusions could be drawn, probably because of faulty technic. The three-day test diet was given, and the examination to determine the absorption of fat and nitrogen undertaken; but they cannot be reported on now.

There was no tenesmus or blood with the diarrhea. The movements were for the most part large.

RELATION OF SPRUE TO ANEMIA

Biermer's[5] original report on pernicious anemia mentioned, as a group of symptoms, digestive disturbances with occasional diarrhea. Elder and Matthews[6] reported two fatal cases of pernicious anemia following labor. The attack was ushered in with ulceration of the tongue and throat. The work of Hunter[7] will be recalled because of his rather extreme view that streptococcic infection of the tongue and upper alimentary tract bore a part in the etiology of pernicious anemia. G. A. Charlton[8] studied the effects of chronic infection with *Bacillus coli*, and produced a very striking anemia, which was characterized by a pari passu reduc-

5. Biermer: Cor.-Bl. f. schweiz. Aerzte, quoted in full in Nothnagel, American Edition, 1905, Alfred Stengel, editor.
6. Elder and Matthews: Lancet **2**: 371 (Aug. 8) 1903.
7. Hunter, William: Pernicious Anemia, London, C. Griffin & Co., 1915, p. 1901.
8. Charlton, G. A.: J. M. Res. **8**: 344 (Nov.) 1902; in Nothnagel (Footnote 5).

tion in hemoglobin and red corpuscles. He concludes that by subinfection the ordinary organisms of the intestinal tract may produce a very definite anemia.

These instances from the literature are mentioned because our study of sprue has led us to think that it may be a bridge between the anemias experimentally produced by the colon bacillus, and possibly others of the usual intestinal flora, and an anemia which probably owes its origin to a true intestinal disease, one which more nearly approaches pernicious anemia than any of the anemias produced experimentally. We are now preparing for a study of the colon bacillus isolated from the duodenal contents in sprue.

It is worthy of emphasis that the remissions in sprue are as striking as in pernicious anemia. That remarkable recurrence which is so often seen in pernicious anemia, even after years of quiescence, is also seen in sprue.

What the relation between the two diseases is, if any, remains to be seen, but it is not improbable that a more accurate study of sprue will shed light on many obscure corners in the study of pernicious anemia.

There is no longer an occasion to mention the confusion between sprue and pellagra. The matter should be dismissed with a word. If the sprue stool and tongue are considered, even in the light of an absence of the skin lesion, there should be no confusion.

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ABSTRACT OF DISCUSSION

DR. DOUGLAS VANDERHOOF, Richmond, Va.: Much credit is due Dr. Wood for having called attention time and again to the existence of so-called tropical sprue in the United States. Chronic or recurring diarrhea, that is, characterized subjectively by absence of pain and tenesmus and objectively by presence of blood, mucus and pus in the stools, is generally due to one of four causes: first, achylia gastrica with diarrhea, a matutinal diarrhea. This cause of diarrhea accounts for from 90 to 95 per cent. of the cases of chronic or recurring diarrhea characterized by absence of pain and tenesmus, by blood, pus and mucus in the stools. Second, cases of pancreatic achylia, characterized by absence or deficiency of the pancreatic ferment in the duodenal contents or in the stools, perfectly definite cases, not occurring very frequently but worthy of consideration. Third, the type of diarrhea in pellagra, and fourth, we must consider sprue. Certain symptoms are common to all these four forms of diarrhea, namely, stomatitis, anemia and weakness, and loss of weight; and from these symptoms it is difficult to differentiate between these four forms. Of course, in sprue the patient goes on to extreme emaciation, whereas in pernicious anemia or achylia the patient is not infrequently a well nourished individual. Then, again, the picture is confused by the fact that either a gastric or pancreatic achylia may complicate pellagra or may complicate sprue, and it is due to this fact undoubtedly that so much confusion has existed in the establishment of sprue as a clinical entity. There are certain cases of so-called sprue that are absolutely relieved by the exhibition of pancreatic ferment in the diet. Other cases of sprue are relieved by an autogenous streptococcus vaccine. As to the differentiation of these diseases: In achylia gastrica, the absence of the gastric secretion is characteristic; in pancreatic achylia the deficiency of the pancreatic ferment in the duodenal contents or in the stools is characteristic. In pellagra, the skin lesions and the mental symptoms help, whereas in sprue examination of the stools is decisive. My personal experience with sprue in Virginia and the neighboring states leads me to confirm the opinion of Dr. Wood and others that so-called tropical sprue is a clinical entity, and that it occurs in the United States in individuals who have never been out of the United States.

DR. JOSEPH H. PRATT, Boston: The patients with tropical sprue that have come to America from the West Indies and from China have had fatty stools. In other words, the diarrhea is a fatty diarrhea. The resemblance of the stools in these cases of sprue to those in complete obstruction of the pancreatic duct is very striking. In three or four cases we did metabolism experiments to determine the amount of fat that was absorbed and the amount of fat that appeared in the feces, and we found that the feces contained so much fat that microscopically they seemed to consist almost entirely of fat. There is no doubt that a great many patients with sprue are coming to this country and cases are developing in the northern states and are unrecognized. Prior to the time that Dr. Wood wrote his first paper there was very little if anything written on the subject of sprue in this country. We should always consider the possibility of sprue in every case of chronic diarrhea with loss of strength and anemia, and examine the stools for fat. The tongue may not be sore at the time the case comes under observation, and the anemia may not be marked but in the cases I have seen, the fatty diarrhea has been the striking feature. I studied very carefully the case of a patient who had not been out of New Hampshire for five years. In that patient the subsequent course and the clinical history were typical of sprue, and if there is one case in the northern states, there must be others.

DR. W. C. ALVAREZ, San Francisco: We see many cases of sprue in San Francisco mainly in people returning from the Orient and India, and I believe that there is something more than the pancreatic lesion present because I have seen pancreatic fatty stools and stools of sprue. In sprue the characteristic thing in all cases I believe is a change of the type of flora in the stools. If you put a sprue patient on a meat diet for a while, he generally improves very markedly. Many patients get well, the bacteria in the stools change, and the stool changes in color. It seems that if it were a pancreatic lesion, the large amount of meat which you feed would not be digested any more than the fat. Take a patient who is comfortable and give him starch, he immediately bloats up with gas if some of those yeasts and moulds are still present. I have seen remarkable cures from the use of vaccine. The strawberry cure is one of the strangest things I have ever seen. Why a man with a violent diarrhea can eat several boxes of strawberries and improve on it is a puzzle. You can differentiate sprue from other types of diarrhea by feeding the patient on a box of strawberries.

DR. EMANUEL LIBMAN, New York: Five years ago I saw a case of secondary sprue in New York. The patient had never left New York City. There was complete achylia and disturbance of the reflexes. Up to that time no cases had been called sprue with a color index above 1. These cases are of importance, and we must diagnose between sprue and pernicious anemia. If you analyze the symptomatology of sprue and pernicious anemia, you will see a close relationship. There is a mistaken idea that in pernicious anemia the symptoms are due to anemia, but if you perform transfusion, you can remove the symptoms, the sleeplessness, the poor digestion, etc., and you can raise the functional capacity of the kidneys, but you do not remove the tongue lesions, the achylia, or the spinal cord symptoms. Evidently an anemia is produced by a toxin which has an affinity for the blood forming organs and the spinal cord. In sprue there is a toxin which attacks the gastro-intestinal system and the tongue. As to the spinal cord changes, I do not know what they are, but there is an important difference there. If the toxin of sprue is found, it will give a lead to look out for pernicious anemia.

As to the pancreas: I have seen a few cases of sprue and have been struck by the resemblance to pancreatitis and I have decided to find the exact condition of the pancreatic ferment. Meanwhile, Dr. Thomas R. Brown of Baltimore has reported that in one case of sprue studies of the feces had shown that the pancreatic secretion was entirely missing.

DR. M. L. GRAVES, Galveston, Texas: I wish to emphasize the fact that sprue is becoming endemic in this country. Up to a few months ago the only cases of the disease that I had seen in Texas were cases that had been imported from South America and Africa, but recently I saw a case which appears to have originated in Louisiana. An interesting

feature of this case is the age of the patient—9½ years. She presents voluminous stools associated with the organism described by Ashford in the Porto Rico cases. This little child presented an epileptoid syndrome which I have not seen in other cases of sprue. The attacks are without a definite aura and occur with great frequency, from three to twenty during the day, associated with great pallor and great sweating. The organisms have also been recovered from the mouth in this particular case. This relationship of epileptoid symptoms to sprue has not yet been established.

DR. ALFRED T. LIVINGSTON, Jamestown, N. Y.: On my way to Porto Rico a few years ago I happened to have as companions on the voyage two people affected very intensely with sprue. I became very much interested in them, and before we got to Porto Rico I became a patient myself, having very severe hemorrhages of the bladder, with clots. I was taken to the hospital and operated on, but as soon as I was able after that, I had my wife write to these two people to come to see me because I had conceived an idea that I might be helpful to them. The impression made on me was that the condition was one involving a tremendous amount of fermentation. The stools were so horrible that the husband of this lady could not stay in the house while that operation was going on. So having had a good deal of experience with an antiseptic which I had used in my medical work, without the least suggestion of toxic effect, I thought that if these people could be filled with this antiseptic, immersed in it as it were, they might get relief. One of the persons I met on my trip, a man, did not take my advice. He died within ten days. The other person, a lady, accepted the idea, and made a complete recovery. Other sprue patients have also been relieved by the same antiseptic, betanaphthol.

DR. EDWARD J. WOOD, Wilmington, N. C.: Dr. Vanderhoof mentioned the occurrence of pellagra and sprue. I have seen that occasionally. The condition that attracts your attention is the superimposed anemia. In pellagra the anemia is a negligible factor. In pellagra on the three-day diet the utilization of fat and nitrogen is perfectly normal even in extreme cases. In one case I thought I saw some improvement from the use of pancreatic ferment, but I would not dare claim credit for every remedy used in sprue any more than I would claim credit for helping pernicious anemia because it seems to help itself. Dr. Pratt emphasized the fatty diarrhea which after all is the essential characteristic and is the pathognomonic sign of the disease. It would be interesting to know what the chemistry of the feces is. Dr. Alvarez brought up the question of the diet which is one of the vital points in the differentiation. The meat diet of Canty is a pound of beef without any fat, scraped and fed the patient in half portions with hot water. I have seen the hemoglobin double in four weeks by that treatment alone. One of my patients had a high color index just before death. I think it is apt to recur late in life, because the English authorities call it a secondary anemia. The point of vital importance, after all, will be the differentiation between sprue and pernicious anemia. Unfortunately cases of sprue will occur where complete laboratory investigation is well nigh impossible. There is no possible doubt that the disease exists.

Effects of Substandard Diet on German Population.—The effects which have appeared relate to all organs. Especially noteworthy is the fact that a tendency to polyuria is present, produced by a very watery diet. Interesting also is the retardation of menstruation in girls and women sometimes for as long a period as a year; the appearance of intestinal intussusceptions; diseases of the genitals in women; besides a great increase in mortality, especially among (*a*) old people above the age of 50, (*b*) younger persons, especially women, (*c*) in the last few years even among schoolchildren, most recently of all, among children up to the age of 6 years. The milk of nursing women is decreasing. The loss of weight among newly born children is not recovered until after many months. Tuberculosis is again as bad as it was twenty-five or thirty years ago.—Dr. Max Rubner.

NEPHRITIS IN THE SOLDIER*

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Two types of nephritis were encountered abroad in soldiers during the recent war. Chronic nephritis was a rare disease and can be dismissed without further discussion, as obviously it was to be excluded by a thorough routine physical examination of all recruits before enlistment. Acute nephritis was more common and a greater problem from the points of view of medical administration as a whole, and individual care of patients in particular.

Acute nephritis was not important in warfare until the present time with the exception of the Civil War, when there were approximately 14,000 cases. It was not prevalent in the Franco-Prussian War, the Chino-Japanese War, the Soudan War, the Spanish-American War, or in the South African War. After 1915, however, it appeared among British, French, Austrian and German troops. No figures have been published as to the frequency of the disease in the American Expeditionary Forces. Among the British in 1917 and 1918, as judged by the admissions in two typical general hospitals, it represented about 5 per cent. of all medical casualties sent from the line.

The type of acute nephritis was so well marked clinically that it came to be called "trench" or "war" nephritis to differentiate it from chronic nephritis or acute nephritis of other types. It had four outstanding clinical characteristics: acuteness of onset; the symptom of dyspnea apparently not of cardiac or mechanical origin; the rapid development and disappearance of edema, and the suddenness and frequency of uremic manifestations. The disease affected all branches of the army and was prevalent among officers as well as men. The etiology was not discovered. Many theories as to the cause were put forward, such as exposure, unwholesome drinking water, lead, or the concentrated and high protein diet contained in rations. None were substantiated. No predisposing factors could be demonstrated.

Physical examination of patients with trench nephritis was essentially negative except for dyspnea, high blood pressure and general edema. The dyspnea was not associated with a marked hydrothorax or with cardiac dilatation. There was often a diffuse coexistent bronchitis without signs of consolidation. The blood pressure was sometimes normal or subnormal, but was usually 170 mm. or more. The edema was most marked in the extremities, over the sacrum and chest wall, and in the face. Edema of the genitals occurred with less regularity, and marked ascites was rare. Retinal hemorrhages were not often seen, and true albuminuric retinitis was unusual.

The course of the disease was that of a subacute nephritis tending to last for several months but not to develop into a chronic progressive nephritis. After a period of rest in bed the patient's fluid output rose, and at the same time there was an increased output of salt. Some patients got rid of their edema in this fashion in a few days, while others took several weeks. The excretion of albumin was high at first and tended to increase during the first days of improvement, after

* From the Medical Division, United States Army Base Hospital 5.
* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

which it fell away to traces and eventually disappeared. The urinary sediment cleared up slowly. At first there were many granular casts, much blood and epithelium. Later hyaline casts appeared and remained for several weeks. A few blood corpuscles seemed to persist for months. The blood pressure fell to normal after sufficient rest in bed, and the dyspnea cleared up promptly. So far as could be discovered, there was nothing specific for trench nephritis in any of these features. They seemed typical of any form of acute nephritis with edema and hypertension.

Among complications, epileptiform convulsions were the most common. These developed in both mild and serious cases, with or without marked edema and with or without extreme degrees of hypertension. They were often associated with mild or maniacal delirium. They were not as alarming as they first appeared and were rarely fatal. Other complications were severe headache and gastro-intestinal indigestion, with nausea and vomiting or diarrhea. Pericarditis and pleuritis were almost never seen.

The eventual prognosis was good, as the mortality in a large series of cases was only 3 or 4 per thousand. The disease, however, did not clear up immediately, and every case was rightly considered as serious, and the patient unfit for any immediate duty.

The treatment for trench nephritis varied in different hospitals. As a routine in Base Hospital No. 5 in Boulogne, a rigid fluid intake and output chart was kept. For the first few days of observation the patient was given a fluid diet of 600 c.c. of milk and 900 c.c. of tea or water. As the fluid output rose, small amounts of bread and jam were added to the diet; and finally when the edema and dyspnea had disappeared, the patients were allowed eggs, porridge, small amounts of chicken, rice and potato, with such desserts as fruits or puddings. An effort was made to avoid diets containing much salt, protein or many calories. The most important single feature of such a course lay in the systematization. The same amount of fluid was given at the same hour every day. When food was added, it was divided carefully into three or four feedings, and each meal contained approximately the same amount of bulk and nourishment. On the whole, the patients did surprisingly well and were very comfortable.

Few drugs were used. Morphin or codein was useful for controlling cough, dyspnea or severe headache. Purgation was avoided as being liable to cause indigestion, and the bowels were regulated with enemas or mild vegetable cathartics. No patients were sweated. A few were given diuretics, but the results obtained were inconclusive. No effort was made to lower blood pressure, as it was difficult to obtain evidence that hypertension alone caused symptoms.

Bleeding seemed efficacious in stopping convulsions. In certain cases, 600 or 700 c.c. of blood were withdrawn, with immediate apparent relief. This procedure next to systematic dietetic regulation seemed most important.

The patients were sent to England on a hospital ship as soon as possible. They all traveled well and seemed to be unharmed by the trip.

The ultimate course in treatment consisted in managing the cases of trench nephritis as though they were cases of chronic nephritis. The diet was gradually made more liberal. After the edema and albuminuria disappeared the patients were allowed to get up, and were sent back to duty or were discharged from the army as unfit after a period of observation lasting for several months.

On the whole, the problem of nephritis in the soldier was essentially that of the treatment of trench nephritis. This was a type of acute nephritis of unknown cause and of remarkable frequency. It was characterized by its suddenness of onset, the symptom of dyspnea, the rapid occurrence and subsidence of edema, the commonness of uremic manifestations, and its low mortality. Clinical study of cases did not demonstrate anything specific as to the nature of the disease. Good results in immedite treatment were obtained by bleeding in the case of patients having convulsions, and by the systematic regulation of food and fluid intake in the less serious cases. The ultimate treatment was that of chronic nephritis.

The disease was serious from a military point of view, as it caused many casualties. However, even very sick patients stood a short journey well so that they could be sent promptly from the line to hospitals outside the zone of advance.

At present it appears that trench nephritis tends to heal and not to develop into a chronic progressive kidney disease. It will be necessary to follow cases for a much longer time than has been heretofore possible before this opinion can be established as fact.

ABSTRACT OF DISCUSSION

DR. HAROLD FEIL, Cleveland: Approximately 100 of these cases have been casualty cases. There has been one striking point and that is the persistence of the hematuria and albuminuria without edema. These patients all resisted treatment in the hospitals for weeks and most of them have been discharged from the army for disability. All these cases were observed for a period of six months or more.

DR. E. P. JOSLIN, Boston: In the absence of Dr. Horace Gray and Major Vanderveer, I would say for them that each had a large series of similar cases under their supervision, and they have attempted to carry out what Dr. Fitz has suggested, i. e., to follow up the course of each case for several years. These gentlemen, who have worked at Vichy and Mesves, respectively, have collected the addresses of all these men, their records in the army, the names of their physicians, and hope to report on their condition later. As others have collected data of this description we should eventually have interesting facts relating to the after effects of this type of nephritis. In general, the innocuousness of the disease at the time of its height was obvious. Our patients at Mesves certainly did very well. The point was also obvious that these cases could be found if one looked for them. Following the influenza epidemic, a systematic examination of the urine of every man at the center was made, and then the cases promptly came to the fore—cases that would otherwise have been overlooked.

DR. H. E. JONES, Roanoke, Va.: I would like to ask the doctor a question: He did not give the type of the cases, except to state that chronic interstitial nephritis was absent. I would like to know what type of the disease he found among those cases of nephritis; that is, whether acute and chronic parenchymatous, or glomerular and tubular forms of the disease.

DR. HOMER F. SWIFT, New York: Following our army through the active fighting period, seeing many troops that were evacuated from July to November, we saw very few cases of this type go through the triages when men were living under trench conditions. When our army got up into Germany and the men were living under better conditions, we saw more cases of nephritis, described as trench nephritis by Dr. Fitz. Perhaps, the influenza epidemic had something to do with it, but these patients did not give a history of having had an influenzal infection.

DR. REGINALD FITZ, Boston: In answer to Dr. Jones, all I can say is that the clinical picture of acute trench nephritis was quite different and distinct from other types of nephritis. In addition there were cases of acute nephritis following tonsillitis, other infections or surgical conditions with marked albuminuria but without edema, hypertension or the dyspnea which was characteristic of the trench nephritis type.

A NEW METHOD FOR TYPING PNEUMOCOCCI BY THE USE OF BLOOD*

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Because of the disadvantages known to be inherent in all the methods used for typing pneumococci by means of sputum or urine, we attempted to devise a method which should be based on the use of the blood of the patient. We finally adopted the procedure described herein. It had been pointed out by Rosenow,[1] and later by Longcope,[2] that pneumococci produce a coagulum when grown in the serum of patients suffering from pneumonia, the clot formation being due to the production of acids, probably from glycoproteins, in the serum. This property—manifested in a different way—we have found to be specific, not only for pneumocicci as a group, but also for the various pneumococcus types. A full discussion of the theory of the reaction is reserved for another time.

PROCEDURE

Ten c.c. of blood are drawn with sterile precautions into test tubes containing a few crystals of potassium oxalate (sufficient to prevent clotting). The blood is then shaken with pure fresh ether, added in small, successive amounts, until the red cells are completely laked. The laked blood is transferred to a sterile centrifuge tube and centrifuged at high speed for five minutes. The disk of red cell shadows which collects at the surface is removed with a heated platinum loop. With a sterile pipet, 0.3 c.c. of the laked blood is placed in each of four sterile stoppered tubes 0.8 by 13 cm. To each of the first three is added 0.5 c.c., respectively, of saline emulsion of proved Type I, II and III pneumococci grown on glucose serum agar. The fourth tube constitutes the control. Sterile physiologic sodium chlorid solution is added to all tubes, sufficient to make up to 1 c.c. Sterile pipets are used throughout. All tubes are stoppered and placed in a water bath at a temperature of 37 C. until the color change appears.

COMMENT

The reaction consists in the formation of hemoglobin derivatives, mostly methemoglobin, which impart to the tube an unmistakable brownish-red color. The final result is a dark brownish-red, gelatinous clot. The chemistry of the reaction has not been fully studied. It is hoped, by spectroscopic means, to discover initial changes and thus shorten materially the time of the reaction. The reaction, as now determined by the naked eye, has been noted as early as after two hours. The average time for appearance of color change is from six to eight hours.

Certain precautions must be observed: The blood should be tested as soon as possible after withdrawal from the vein. Clotted blood should not be used. The ether should be free from alcohol, poured fresh from closed containers. Saline emulsions of actively growing strains of pneumococci, grown on glucose serum agar, should be employed. Strains that have been artificially cultivated for some time and are growing poorly have delayed the reaction, and may even fail to produce any change.

TESTS

Under the kind supervision of Dr. E. Lebman studies were made on fifty-two patients. The tests in forty-nine of the cases could be confirmed by agglutinin reactions made on organisms isolated from sputum, lung puncture, or both. The tests on the remaining three patients are not checked up with agglutinin reactions, no sputum being available at the time (from twelve to fourteen days after the crisis). These tests are included to show that the reaction apparently does not persist after the crisis.

The forty-nine cases corroborated by agglutinins are divided as follows:

Group I, seven cases (14 per cent.).
Group II, eleven cases (23 per cent.).
Group III, nine cases (18 per cent.).
Group IV, eighteen cases (37 per cent.).
Mixed infections, four cases (8 per cent.).

The following mixed infections (as shown in the accompanying table) were disclosed:

Case 4: Types I and II: Agglutination tests on organisms isolated from sputum proved these to be Types I and II.

Case 15: Types I and III: A Type III organism was obtained from sputum; a Type I organism, from lung puncture.

Case 23: Types I and III: The sputum yielded a Type III organism. A lung puncture was unreliable (clumps being present in all tubes).

Case 33: Types I and III: A Type I organism was obtained from sputum; a Type III organism from lung puncture.

It may be inferred that, in some cases of Type I pneumonia, serum therapy may have been unsuccessful because of the presence of unsuspected mixed infections.

Tests on several patients were repeated at intervals to establish the persistence or disappearance of the reaction. In three instances (Cases 34, 42 and 43) the reaction disappeared after the crisis. The three cases mentioned above, in which tests were made from twelve to fourteen days after the crisis, proved to be negative. A result was obtained as early as the second day. There was no opportunity to make studies on the first day of the disease.

Control tests, on patients suffering from diseases other than pneumonia, were uniformly negative.

COMPARISON WITH AVERY TEST

Avery and precipitin tests were made in practically every case. There were twelve instances in which our test proved the presence of organisms of Types I, II and III (confirmed, as stated above, by agglutination tests), in which the Avery test gave a negative result. In this group of twelve cases, two were instances of mixed infections, one case showing Types I and II, and the other Types I and III. In one instance, our test showed the presence of infection by Types I and III; agglutination showed the same; the Avery and

* From the Pathological Laboratory of the Mount Sinai Hospital.
* Read before the New York State Medical Association, May 7, 1919.
1. Rosenow, E. C.: J. Infect. Dis. 1: 280 (March 19) 1904.
2. Longcope, W. T.: J. Exper. M. 7: 626 (Aug. 25) 1905.

precipitin tests showed Type III only. In one instance the agglutination method and our method showed the Type III organism; the Avery test was negative, but the precipitin test gave a reaction for Type III. There was the same experience in another case of Type I infection.

COMPARISON WITH PRECIPITIN TEST

The test was in agreement with the precipitin reaction (when the latter was present), with the following exceptions:

Case 31: Our test showed Type IV; precipitin, Type II.
Case 36: Our test showed Type IV; precipitin, Type III.
Case 37: Mixed infection. Our test showed Types I and III; Avery test, Type III only, and precipitin test, Type III only.
Case 46: Our test showed Type III; precipitin reaction showed Type II.

The accompanying table gives the data from some cases of special interest.

RESULTS OF DIFFERENT TESTS FOR PNEUMOCOCCI

No.	Case	Diagnosis and Day of Illness	Avery, Type	Precipitin, Type	Agglutination, Type	Lung Puncture, Type	Test, Type
41	B. 190872	Lobar pneumonia, 3d day	Neg.	I	I	....	I
		Lobar pneumonia, 5th day	....	....	....	....	I
		Lobar pneumonia, 7th day	....	....	....	....	I
		Lobar pneumonia, 10th day, 3 days posterit.	....	....	....	....	Neg.
30	S. 191008	Lobar pneumonia, 6th day	I	Neg.	I	....	I
		Lobar pneumonia, 8th day, 2 days posterit.	....	....	....	....	Neg.
43	D. 191023	Lobar pneumonia, 3d day	Neg.	Neg.	I	....	I
		Lobar pneumonia, 8th day, 2 days posterit.	....	....	....	....	Neg.
48	T. 191055	Lobar pneumonia, 4th day	I	Neg.	I	....	I
7	R.	Lobar pneumonia, 5th day	*	Neg.	....	II	II
80	G.	Bronchopneumonia, 4th day	II	Neg.	II	....	II
22	B.	Bronchopneumonia, 3d day	Neg.	Neg.	II	II	II
28	R.	Bronchopneumonia, 6th day	II	II	II	....	II
		Bronchopneumonia, 8th day	....	....	....	....	II
9	S.	Lobar pneumonia, 5th day	III	III	III	....	III
12	L.	Lobar pneumonia, 7th day	III	III	III	....	III
		Lobar pneumonia, 8th day	....	....	....	....	III
16	R.	Lobar pneumonia, 6th day	III	III	....	III	III
38	B.	Bronchopneumonia, 4th day	Neg.	II	....	III	III
		Bronchopneumonia, 6th day	....	....	....	....	III
5	M.	Lobar pneumonia, 5th day	Neg.	Neg.	IV	IV	Neg.
24	M.	Bronchopneumonia, 10th day	Neg.	Neg.	IV	....	Neg.
		Bronchopneumonia, 12th day	....	....	....	IV	Neg.
31	L.	Bronchopneumonia, 11th day	Neg.	Neg.	IV	....	Neg.
45	M.	Lobar pneumonia, 4th day	Neg.	Neg.	IV	....	Neg.
		MIXED INFECTIONS					
4	C.	Lobar pneumonia, 8th day	Neg.	Neg.	I	....	I
					II	....	II
15	L.	Lobar pneumonia, 6th day	Neg.	Neg.	III	I	III
							I
23	C.	Bronchopneumonia, 8th day	Neg.	Neg.	III	Chums in all tubes	I, III
23	W.	Lobar pneumonia, 3d day	III	III	I	....	I, III
		Lobar pneumonia, 5th day	....	....	....	....	I, III
		Lobar pneumonia, 7th day	....	....	....	III	I, III

* Sputum unobtainable.

ADVANTAGES OF THE METHOD

1. It is simple.
2. The reaction, when it occurs, is unmistakable and persists.
3. From 5 to 10 c.c. of blood are practically always obtainable, whereas satisfactory sputum is often not available, especially in early stages of the disease.
4. A reaction with blood is obviously more accurate than one depending on sputum, in which contact types may be present.
5. Mixed pneumococcus infections can be determined.

Studies will be extended to establish the possibility of specificity in other infections.[3]

3. Since this article was written, a positive Type I test was found in a case which proved to be peritonitis due to Type I pneumococcus.

EPIGASTRIC HERNIA IN THE SOLDIER

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There is such a general failure on the part of physicians to realize the importance of the small epigastric hernia, with an even greater failure to recognize the hernia itself, that I wish to report a typical instance with operation, and to speak briefly of six other patients operated on in this base hospital. I shall also call attention to four other cases which either came to my attention elsewhere or were cases in which diagnosis was made and operation performed by surgeons who had, in their work here, come to recognize the importance of these trivial-appearing hernias in causing obscure abdominal symptoms.

Let us say in the beginning that there is no lack of textbook description of the hernia. Berger[1] found 137 in 10,000 individuals (120 males and seventeen females); Macready found thirty-eight cases of epigastric hernia to 19,341 cases of inguinal and femoral hernia, but he obviously overlooked all but the relatively few which are actually obtrusive in appearance. In our "recruit mill" at this camp, we have found them by the dozen, so commonly, in fact, that we have made no note of them unless they produced symptoms, and but few of them do. Only seven have been accompanied by sufficiently severe symptoms and signs to lead us to advise operation.

These hernias generally occur, as stated in most textbooks of surgery, in or near the central line in the space running 2 to 3 inches upward from the navel. Multiple hernias are not infrequent. Keen described four varieties:

1. A small mass of subperitoneal fat without any sac.
2. In addition to the subperitoneal fat a process of parietal peritoneum attached to it without any contents.
3. A sac containing omentum (omentocele).
4. A sac containing intestine.

An ordinary lipoma may be found in the epigastrium, but it is more movable than the hernia, and is not tender.

If the opening of the sac is of some size, the contents may increase when the patient coughs. The orifice is generally so small, however, that it is probably in less than 10 per cent. of the cases that this sign is observable. Bergman states that the majority contain omentum and transverse colon. This is certainly an error, for of the many score that I have seen, perhaps only half a dozen contained any part of the bowel. The fault with all the statistics lies in the failure to recognize the minute hernias, of the size, say, of a shirt button. There are twenty of these to one of the size of a filbert, and they are too frequently entirely overlooked.

The hospital for the ruptured and the crippled has found no such conditions as Bergman[2] has mentioned.

Symptoms.—Perhaps in 80 per cent. of the cases there are no symptoms. These are in general the ones in which no true omentocele exists. When a bit of omentum actually comes through the minute orifice,

1. Berger, in Keen, W. W.: Surgery: Its Principles and Practices, Philadelphia, W. B. Saunders, 1907.
2. Bergman: Quoted by Keen (Footnote 1).

often from 1 to 4 mm. in diameter, it generally becomes fast, cannot be reduced, and by dragging on the omentum causes symptoms which I should place thus in the order of their importance:

1. Pain or troublesome discomfort.
2. A feeling of dragging.
3. The ulcer syndrome, sour-stomach, occasional nausea, even vomiting, distress after eating, with periodic exacerbation of all symptoms, and even attacks of colic.

SIGNS

There is a bulging in the epigastrium, such as might result from the subcutaneous insertion of a small button. This mass occurs in these cases with symptoms of great tenderness on pressure, and is occasionally reducible; in that event, reappearing when the patient coughs.

Sharp pressure causes the patient to double up to escape the pain. In two or three instances, notably in one of a man with gastric ulcer, I found what I have called the "electric bell reaction." A touch on the hernia causes instantaneous belching—a quicker response than one would believe possible.

The definite association between epigastric hernia and gastric ulcer has long been known, but is not so widely recognized by internists as it should be. A patient receives no benefit from an operation for ulcer if such a tender hernia is overlooked. As I have elsewhere stated,[3] the explanation probably lies in the long continued reflex irritation of the stomach by the omental "drag," so that hyperacidity and ulcer follow, as in chronic appendicitis.

REPORT OF CASES

J. H. S., a young soldier, was sent to the base hospital, Camp Logan, from the stockade, in which he had been confined for being absent without leave. He complained of constant indigestion, gas, pain, sour stomach and so much distress that he could not eat. He had been in another base hospital for the same trouble.

I found a very tender omentocele 3 mm. in thickness and 1.5 cm. in diameter, and recommended immediate operation, believing it to be the seat of all his trouble. There were no signs of chronic appendicitis, ulcer or gallbladder disease. Three days after the operation the patient asked why the omentocele had been overlooked at the previous hospital, "for," said he, "I now feel well for the first time in years. It was that constant, nagging pain that made me so cantankerous that I went absent without leave and, as a consequence, was put under arrest."

He was discharged well in a few days, with a recommendation that his sentence be suspended, as he was more of an invalid than a criminal.

In six similar cases, in only one of which did the sac contain part of the bowel, operation was performed here with perfect results. The surgeon who assisted in the first case was called as a witness in court to his former home. Learning that his associate had a patient with indigestion who failed to respond to any treatment, he examined him, found such a hernia, operated the next morning, and showed me a letter after he returned, stating that every symptom had disappeared by the fourth day.

Another young surgeon was ordered to a distant base hospital, and recognized such a hernia in a case of an officer at the time of his third admission for some acute abdominal disease, but was unable to convince the chief of medicine that the hernia was the cause of the trouble. On the fourth admission, a few weeks later, he talked so convincingly to the chief surgeon that the patient was operated on, and, what is more important, has remained absolutely free from symptoms ever since.

At his quarters in Houston, I saw a young officer with a violent attack of colic, his organization surgeon believing that he had a partial obstruction. His epigastric hernia was one of the most tender that I have ever palpated. He had been examined repeatedly in one of the most famous of eastern hospitals, with free use of the stomach tube and of the roentgen ray, but without definite diagnosis and, obviously, without any critical examination of the epigastrium. He is preparing to go to the hospital for operation at this time. The very fact that a two weeks' course of investigation, with every modern appliance, failed to show any organic digestive disease leads me to believe that his symptoms will all clear up with the operation.

I have just examined, in another hospital, a patient who has had his appendix removed and his gallbladder drained, with no benefit, and who has just such a tender hernia. This patient is to be operated on at once.

CONCLUSIONS

Physicians should examine with special care for epigastric hernia in every case of digestive disease. If a hernia is found, the opinion of a surgeon should be obtained as to the advisability of operation, unless it is clear that the hernia is without symptoms. These hernias are so minute and unobtrusive in many cases that we may safely say that the failure of the average physician to find them in possibly about 1 per cent. of the subjects examined is to be taken as evidence that the examination was made without sufficient care. Since less than a fourth of these hernias are associated with any digestive disorder, the question of operation arises in only a minority of cases; but it should, nevertheless, receive the most careful consideration. The surgical operation involved is trivial in comparison with the importance of the results commonly obtained.

3. Hall, J. N.: Borderline Diseases, New York, Appleton & Co., 1915.

HEMORRHAGE AND BLOOD TRANSFUSION IN THE WAR*

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Among the advances in medicine and surgery wrought in France during the war was the forcible demonstration of the great usefulness of blood transfusion; not only that, it was shown also that thus far nothing has been found to take the place of blood, once a hemorrhage has passed beyond the limits of safety.

This war development is of real significance for, despite efforts to popularize blood transfusion, despite all the brilliant advances of recent years made in this line of work and the reports of innumerable lives prolonged, and lives saved, by its use, there always existed in the profession generally an apathy toward it, a skepticism not only as to its efficacy, but also as to its need. How often have we been told that it is the rarest thing for a patient to bleed to death! The woman suffering from ruptured ectopic pregnancy never passes away from loss of blood—the bleeding gastric ulcer never bleeds till actual exitus. The torn blood vessel of a mangled limb always becomes twisted and plugged; so bleeding from it ceases. And after all, so we were told, a salt infusion or a gum infusion is all that is needed—urgent cases may, perhaps, demand the introduction of the solution

* Read before the Section on Surgery, General and Abdominal, at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

by way of the veins. But, in either event, they will do all that blood will do.

Would that this were so! The number of American dead populating French cemeteries would be reduced quite considerably and the feeling of animosity toward those responsible for the ill-directed, albeit sincere, efforts to introduce gum solution into the treatment of hemorrhage and shock in the battle-wounded would be less keen. The theory was, as I understand it, that the solution of gum acacia possessed all the powers of salt solution for combating shock and refilling blood vessels emptied as a result of hemorrhage. But this was not all: It had a further advantage over salt solution—an advantage approximating even that of blood—namely, the power of sustaining a rise in blood pressure and of remaining within the confines of the blood vessels.

By way of explanation to those who perhaps are not familiar with the sedative degrees of efficacy of salt solution in blood it may be said that in cases of extreme hemorrhage and shock, while salt solution may relieve the condition, it has little sustaining power, chiefly because it rapidly passes out of the blood vessels into the surrounding tissues by osmosis. Blood, on the other hand, has real sustaining power because of its oxygen-carrying properties and its ability to remain intact as a circulating medium. It goes without saying that any medium possessing such attributes, and of a harmless nature—as was said to be true of gum solution—would have been of extreme, really untold, value in the treatment of wounded men. And it was quite in order to try it out. That the studies were, apparently, not carried out with an open mind, that overwhelming evidence against the solution was not sufficient to cause its abandonment, instead of promoting futile efforts to improve it, is greatly to be regretted. It would perhaps have been unfair to demand that when gum solution failed to measure up to expectation no effort should have been made to improve it—the probabilities are that Dr. Cannon and his co-workers felt that the medium had so much to commend it that further efforts were justified. I can only say that with its initial fall from grace, there arose a fear of it and a prejudice against it of such widespread proportions that it never had a chance afterward. Besides, we were at war, our troops were engaged in actual battle, the wounded were coming in by the hundreds and thousands: this was no time for further experimentation. All the efforts of the shock teams, surgeons, physicians and nurses should have been concentrated on salt solution and blood transfusion, the efficacy and the limitations of which we already knew. It is my opinion that if one-half the energy and time that were spent on gum solution had been spent on efforts to get blood and secure donors, we would have more to show for our efforts. Salt solution was practically always at hand—I say practically, because the strain and the stress were so great, at times, that even this simple remedy was not to be had; so we needed, chiefly, a more intensive effort to secure blood—to be used only in those cases in which salt failed to help.

When my attention was called to the fact that patients who had been given gum solution were failing to react, that in certain instances the blood pressure not only failed to show the expected rise, but actually fell, that the fluttering pulse failed to steady and that the depression even had a tendency to become more alarming than it already was, I suggested, when my advice was asked, that salt solution be given instead of the gum, and that more intensive efforts be directed toward securing blood for those most in need of help. The results were gratifying. It was possible to secure blood oftener than one would imagine, and not from the hospital personnel, either. I am opposed to using these self-sacrificing, overworked persons, even when they volunteer. Passing troops, billeted troops, the lightly wounded, patients with fracture, gave willingly of their blood.

Even so, the number of lives thus saved, compared with the number that might have been saved, was small—and all because blood in bulk was not obtainable, and salt solution, in many cases, would not answer the purpose. I am confident that the high mortality in certain types of cases would have been reduced materially had it been possible to give the patients even small quantities of blood. This is particularly true in the case of those compound, comminuted fractures of the femur in which the patient came in severely shocked by loss of blood, pain, hunger, fatigue and delay in getting him back to the base. The splints were usually properly applied. Salt solution overcame the shock; but because too much had been expected of it, and because blood was unavailable, results were too often fatal in spite of immediate operation.

I recall the case of that man who came in almost lifeless, his left femur shattered in its lower third by a through and through shell fragment. For twenty-four hours he hung between life and death, but as the result of the most judicious use of salt infusions he gradually picked up until operation was considered feasible. A further delay of twelve hours would have been better, but he began to show definite signs of gas infection, and it was then or never if an operation was to be performed. He died eighteen hours after it. If we could have given him 400 c.c. of blood during the operation, he would surely have survived.

I could cite numbers of cases like the one just mentioned, but there is little to be gained thereby. We came to fear this type of case more than others. At times it was impossible to delay operation a moment, owing to the fulminating gas infection which was so prone to develop. Salt solution to the extent of 500 or 1,000 c.c. would be given in the shock tent, a bit of heat applied, and the operation performed. When we had blood, it was customary to give it just as the operation started, in order to tide the patient over; and those who received it invariably did better than those who did not. A case in point is that of a sergeant who came in with an arm shattered, a leg hopelessly injured, and his remaining hand badly torn, one of the most battered-up men it has ever been my pleasure to see live. He too was worked over for twelve hours, at the end of which time some blood was given him. He was put under a light ether anesthesia, and one surgical team removed the arm while another took off the leg. A few days later he had to be put to sleep again to have his right hand cleaned out, his condition at the primary operation having been such that it had to be left untouched.

Another case has always stood out in my mind: A very young trooper was brought in—the instances I am citing occurred during the second battle of the Marne—with his left leg hanging by some loose tissue, the whole wound area filled with dirt and grass and

creating a strong suspicion of a gas infection. His condition was so critical that a member of the shock team attached to our outfit, seeing him lifted out of the ambulance and recognizing the urgency of aid, had him carried directly to the operating room. Any kind of operation then would have meant death; so while he was being given 500 c.c. of blood, which were, fortunately, obtainable, I simply removed the foot with one stroke of the knife and put on a bandage—trusting to luck concerning later developments.

It was remarkable how that boy picked up. Within a few hours, aided by hot water bottles and some hot drinks, he had taken a new lease on life. Nor did he slip back in the slightest—even when, twenty-four hours later, the signs of gas infection were unmistakable. He withstood an amputation above the knee without a quiver and, a few days later, was evacuated to the rear, a well, happy boy, smoking the inevitable cigaret. I could cite other instances like this one, equally gratifying; but one example is as good as a dozen in the same class of cases.

So much, then, for the acute hemorrhage and shock of the battle casualties. The need for blood was great and urgent; the supply, pitifully small. Substitutes were tried and found wanting. Further to the rear, where conditions were a bit less strenuous than in the forward areas, it was possible to secure blood more often, and in greater quantities. Thus, in the base hospitals, a great light was shed on the value of blood transfusion in the anemias secondary to battle wounds. These were very common and most distressing. The men would lie pale, inert, unable to eat, nervous, day by day slipping back just a little, while their wounds not only failed to heal but became increasingly dirty, until all bodily resistance being finally overcome, septicemia ensued, and death resulted. Particularly was this true of bone and joint cases.

We transfused a number of these men, and in nearly every instance a prompt improvement followed. One of them had a huge wound of the buttocks with a great area of bone involvement—always a sad condition. He was having rough going until he got some blood, after which his improvement was rapid and continuous. Another man had a big thigh wound and a septicemia—staphylococcus, I think. He overcame the septicemia, as many did, but his anemia was so profound that he did not improve. With two or three doses of blood, however, he took on renewed life and finally recovered, though the leg had finaliy to be removed. Still a third, and a most remarkable demonstration of the efficacy of blood transfusion, was that of a young lieutenant of aviation who, being wounded through the chest, crashed to earth, sustaining a compound fracture of both bones of his right forearm, a similar condition of the bones of his left lower leg, and a compound fracure of the bones of his right foot. Two months later, when I saw him, he was a mere skeleton, and, in addition to his fractures, had three intractable bedsores and a knee joint involved in a metastatic infection necessitating the turning back of the patella. It was clearly a case of too much absorption from too many foci of infection. In all, this man received four transfusions. After the second, his right leg was removed just above the knee for, with the foot hopelessly crippled and the knee joint badly infected, it was simply pulling him down without offering him anything in case of his recovery. The last two started him on the road to recovery. He was far from a well man even when he reached America; but without those transfusions his chances for life would have been nil. These three cases, each one of a different type, are sufficiently illustrative to prove the efficacy of blood in aiding the recovery of the battle-wounded.

At my suggestion, the sodium citrate method was adopted by the Medical Department of the American Expeditionary Forces as the only method of blood transfusion to be used. The reasons for this are so obvious as hardly to need explanation. Its simplicity, its elasticity, the fact that it could be employed under circumstances that precluded the use of any other method, all combined to make it the one procedure of election. At my further suggestion, all transfusion work in France was turned over to the medical men. Thus it happens that many men have obtained a wide experience in blood transfusion who, in civil life, had had no opportunity to familiarize themselves with it. A brilliant page in the history of blood transfusion was written in France. Let the physicians who wrote it there expand the chapter here.

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THE COURSE OF EVENTS IN SECONDARY WOUND SHOCK *

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In the issues of THE JOURNAL of February 23 and March 2, 1918, there was published a series of articles by Cowell, Fraser, Hooper and myself which described certain clinical observations that we had made on soldiers who suffered from shock and allied conditions. These observations confirmed earlier reports on the persistent low arterial pressure, the rapid pulse and respiration, and the lowered body temperature of the shock state; they also revealed a concentration of corpuscles in the capillaries, a reduction of the alkali reserve corresponding in general to the degree of lowering of arterial pressure, a marked sensitiveness to ether or chloroform anesthesia, and a tolerance of nitrous oxid and oxygen as an anesthetic. On the basis of these facts a definition of traumatic or wound shock might be offered; it is a general bodily state occurring after severe injury and characterized by persistent low arterial pressure, rapid pulse, pallor or slight cyanosis, sweating, superficial rapid respiration, and usually by a dulled mental condition.

EXEMIA AS A CAUSE OF LOW PRESSURE

Among the articles in the series above mentioned was a theoretical discussion of the nature of wound shock, in which the low blood pressure was regarded as the central fact of the fully developed complex.[1] Reasons were given for refusing acceptance of the acapnia theory and the nerve exhaustion theory of the low pressure. The factors determining arterial tension were then analyzed, with the result that the low pressure was ascribed to "exemia"; that is, a

* Read before the Section on Surgery, General and Abdominal, at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. Cannon, W. B.: A Consideration of the Nature of Wound Shock, J. A. M. A. 70: 611 (March 2) 1918.

temporary lessening of the volume of circulating blood, though not a loss of blood from the body. The possibility that the acidosis of shock, if carried to a sufficient degree, might play a rôle in causing further exemia was considered, but the occasion for the primary fall of pressure was left unsettled.

Shortly after the foregoing articles were presented as a report to the Subcommittee on Shock of the English Medical Research Committee, opportunity was offered at University College, London, to cooperate with Prof. W. M. Bayliss in an experimental analysis of the phenomena which had been observed clinically. Unfortunately, that work was cut short by military necessities, and the possibility of resuming it did not arise until the establishment of the Laboratory of Surgical Research of the American Expeditionary Forces at Dijon, France. Much that appears later in this report has come from observations made in London and from observations made by the group working at Dijon.[2]

PROPER EVALUATION OF THE DIFFERENT AGENTS IN SHOCK

That the phenomena of shock require experimental analysis is clear from a consideration both of its inherent complexity and of its attendant conditions. Shock has long been one of the great mysteries in surgery, and because of associated hemorrhage and infection there is usually much difficulty in assigning proper values to the different agents which might produce the general state of depression. No doubt hemorrhage may have an important part in the development of this state, and infection likewise is important; but there are recorded cases in which both hemorrhage and infection were absent or slight and in which, nevertheless, shock was observed. These facts of observation have led to the view that, beside hemorrhage and infection, there is an unknown factor at work.

Various views have been advanced to account for the nature and operation of this unknown factor. It was early suggested that serious wounds exhaust the nerve centers controlling the blood flow and that in consequence arterial pressure falls. This view has been extended so as to include the idea that the shocked man is suffering from general exhaustion not only of nerve cells, but of other parts of the body as well. Another view which has been widely noticed is that excessive respiration, by reducing the carbon dioxid content of the blood, causes such vascular changes as to reduce the volume of circulating blood. And still another suggestion is that the low pressure follows accumulation of fat either in the lungs or in the nerve centers governing the circulation; in the former instance the low pressure would be due to mechanical obstruction in the pulmonary capillaries, and in the latter case it would be due to injury of the vasoconstrictor center by anemia. None of these views as to the unknown factor in shock has been generally accepted. Possibly, as will be seen later, certain of them may at some stage have significance in the production of shock. The fact that the condition of shock has long remained unexplained, however, indicated the need for further investigation. The question to be settled seemed to be a determination of what factor, naturally related to the onset of shock, may so operate in the body, when hemorrhage and infection are ruled out, as to induce the characteristic persistent low blood pressure of the shock state.

DUPLICATING IN EXPERIMENTS THE CONDITIONS SURROUNDING SHOCK

One of the fundamental principles of experimental research is that the phenomenon to be studied shall present, when experimentally reproduced, as much detailed similarity as possible to the phenomenon as it occurs naturally. This is a principle which has been largely neglected in experimental investigations of shock. There is no doubt that a persistent low blood pressure can be produced by a variety of means. Investigators have reported the duplication of certain aspects of shock by prolonged stimulation of nerves, by severe and long-continued manipulation of exposed intestines, by the application of acid to the abdominal viscera, by vigorous over-ventilation of the lungs, by repeated punching of the diaphragm, or by injecting into the circulation large amounts of cream. It is possible that such procedures induce changes similar to those which may occur naturally in shock; but no one can successfully argue that such procedures reproduce the circumstances which occasion shock after ordinary wounds or injury. Obviously, it is desirable to duplicate so far as possible the actual conditions which give rise to shock and then to analyze them to determine what factor among them is operative.

Shock occurs in warfare on an enormous scale. To find evidence of the interest which the subject of shock has aroused at times of fierce strife one needs only to look through any large catalogue of medical literature and observe the dates of publication of articles. In warfare the shock state occurs characteristically in association with extensive and severe wounds—wounds in which large tissue masses are shredded, torn or crushed; as, for example, when there has been rupture and mashing of muscle by shell fragments. Similarly in civil life, traumatic shock is seen characteristically after injuries under car wheels or in machinery, when limbs have been badly mangled.

As Cowell[3] pointed out, there are certain very severe wounds in which death is certain to occur soon because of the anatomic damage which has been done. The patient's condition may be seriously complicated by abundant hemorrhage. In such cases, symptoms of shock are seen immediately; and from the earliest moment there is low pressure. This may be called "primary wound shock." On the other hand, there is testimony from a variety of sources[4] that after large wounds the state of shock commonly does not appear at once, but develops in the course of a few hours. This is Cowell's "secondary wound shock." When shock thus develops it may be attended by little hemorrhage, and it may occur too soon to be due to infection. Since these facts have been actually observed by medical men and dressers working in front line relief stations, there is justification for looking for the development of a state of shock in which hemorrhage and infection are negligible factors.

2. Already reports of these observations have appeared: Cannon: Med. Bull. Med. Research Society of the American Red Cross, Paris, April, 1918, p. 426; Compt. rend. Soc. de biol. 81: 850 (Oct. 19) 1918. Bayliss: Intravenous Injection in Wound Shock, London, 1918. Cannon and Bayliss: Note on Muscle Injury in Relation to Shock, Report of Special Committee on Surgical Shock, English Medical Research Committee, March 14, 1919, p. 19. Cannon: Some Characteristics of Shock Induced by Tissue Injury, ibid., p. 27; Mil. Surgeon 44: 494 (May) 1918.

3. Cowell, E. M.: The Initiation of Wound Shock, J. A. M. A. 70: 607 (March 2) 1918.

4. Archibald and McLean: Ann. Surg. 66: 280 (Sept.) 1917. Sant: Bull. Mém. Soc. de Chir. 44: 207 (Feb. 6) 1918. Quénu: Presse méd. 26: 69 (Feb. 7) 1918.

EXPERIMENTAL PRODUCTION OF SHOCK

In order to duplicate in lower animals conditions which give rise to shock in man, the thigh muscles in the anesthetized cat were traumatized by means of a blunt wedge-shaped hammer. While being struck, the muscles were supported by an iron block. The trauma usually failed to break the skin, so that infection from without was impossible. Occasionally the femur was broken, but this had no important influence on the results which were seen. After this procedure the course of events was followed and the arterial pressure was recorded by means of a mercury manometer. In Figure 1 is presented a record of the blood pressure changes typically seen after such trauma.

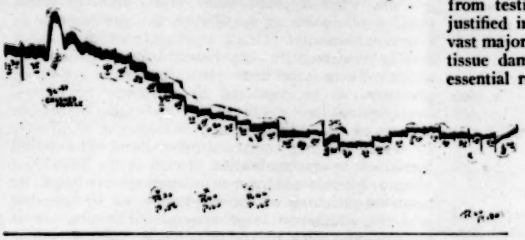


Fig. 1.—Typical fall of arterial blood pressure after crushing muscles of the thigh; *R*, respiration; *P*, pulse.

As Figure 1 indicates, the crushing of the muscles in the hind leg may have no immediate effect. After about twenty minutes, however, a fall of arterial pressure begins, and after about an hour the pressure has usually fallen to 80 or 90 mm. of mercury or even lower; that is, to a shock level. Pressure may persist at this level for several hours. Obviously, a general bodily condition resembling shock has been produced by duplication of circumstances which induce shock in man. The only variant from human conditions is the presence of anesthesia. That this is not a determining factor, however, is indicated by the use of a controllable anesthetic such as ether, which may be lightened as the animal goes into deeper and deeper stupor. The lessening of the ether concentration under these circumstances has no beneficial effect in improving the circulation.

THE PART PLAYED BY NERVOUS IMPULSES

The general bodily state which has been caused by the crushing of tissues in one hind leg naturally raises the question as to whether the widespread effect in the organism is due to nervous impulses roused by the trauma. These impulses on passing to the central nervous system might so affect it as to produce profound depression of nerve cells and the exhaustion which is apparent both in experimental animals and in human beings when shocked. Is that the case? The nature of the experiment permits the settlement of this question. It is only necessary to transect the spinal cord above the lumbar plexus or to sever all nerves of the limb which is to be injured in order to disconnect the region from the central nervous system. When this has been done and the denervated muscles are traumatized, events occur similar to those seen after trauma with the nerves intact (Fig. 2). There is common testimony from men who have been seriously injured that the wounds are not painful; in other words, afferent impulses are not arriving from the injured region in any such intensity as to affect deeply the central nervous system. It would be rash, however, to argue that nervous impulses play no part in the establishment of shock; indeed, there are cases in which a pure nervous shock from trivial wounds seems to be present. From personal experience and from testimony of other observers, however, I am justified in reporting that these cases are rare. The vast majority of shock cases are associated with severe tissue damage. As shown in Figure 2, there is no essential relation between the production of shock in such instances and excessive stimulation of the central nervous system.

Fig. 2.—Fall of blood pressure after muscle injury though the nerves to the injured limb had been cut. Rise of blood pressure to the original level after tying (at 11:41) the blood vessels to and from the injured region. *A*, left leg muscles hammered; *B*, muscles hammered again; *C*, clip on vessels to left leg.

TOXIC MATERIAL PROCEEDING FROM WOUNDED TISSUES

If the general bodily state resulting from local trauma is not mainly the consequence of effects produced on the nervous system, the relation between the general and the local conditions may be looked for in the other great integrating system, namely, the circulatory. Quite possibly there is given off, from the injured tissue to the flowing blood or lymph, material which, when carried to the rest of the body, proves toxic and affects the vascular system in such a way as to lower arterial pressure. The idea can be readily tested. The blood vessels of the leg (the iliac artery and vein) are tied and the muscle then crushed. As stated above (Fig. 1), the arterial pressure usually begins to fall in the cat about twenty minutes after the injury. In Figure 3, the blood vessels of the leg were tied before the muscles were smashed, and ligatures were left in place for thirty-three minutes after the injury. The record shows that there was no dropping of blood pressure during this period; but as soon as the blood flow was restored, the pressure promptly fell to a low level.

The fall of pressure after restoration of blood flow in the traumatized limb might be regarded as due to loss of blood and lymph into the damaged tissues and not to the washing out of toxic material from these tissues into the rest of the body. This suggestion was put to test by removing with symmetrical cuts the two hind legs and weighing them. The difference in weight, which in some instances was only 10 per cent. of the estimated blood volume, would not represent enough extravasated blood to account for the fall of pressure.

The conclusion appears justified, therefore, that a pressure-lowering substance passes from the traumatized region to the rest of the body by way of the circulation. Extravasation of blood may augment the depressant effect.

The conclusion just stated receives support from an experiment in which the muscle was injured, and while the pressure in consequence was falling, the vessels of the leg (the iliac artery and vein) were clipped. As shown in Figure 2, the occlusion of the vessels was followed by a progressive rise of pressure to the normal level. This evidence indicates, therefore, that whatever may be the substance arising from the injured tissues, it is fairly promptly changed in the body so that its effect is not permanent.

Fig. 3.—Failure of blood pressure to fall at the usual time after muscle injury if the blood vessels to the injured region have been tied. On restoration of the blood flow, the pressure promptly falls. *A*, vessels clamped; *B*, clamps off.

Experiments which have been performed by Cattell since returning to the United States indicate that the fall of blood pressure is not, at least in the early stages, associated with dilatation of the arterioles. This evidence is in agreement with that reported by Seelig and Lyon,[5] by Mann,[6] and also by Erlanger and Gasser.[7] It is further testimony against the view that shock is primarily due to nervous exhaustion.

Careful examination was made of the lungs in several of these cases by Col. L. B. Wilson and by Major Henry W. Cattell, and in no instance was there evidence of any accumulation of fat. Furthermore, there was no twitching or other disturbance which might indicate that fat had passed through the pulmonary capillaries and into the central nervous system. The fall of pressure, therefore, cannot be attributed to fat embolism.

Although there was usually a change of respiration in the direction of greater rapidity and lessened amplitude, this was not such as to cause a washing out of carbon dioxid and a consequent acapnia. The lowered blood pressure, therefore, cannot be ascribed to such a change in the blood.

For a long time it has been known that tissue extracts, when injected into the blood stream, will cause a temporary fall of pressure. In 1903, Vincent and Sheen[8] proved that watery extracts of a variety of tissues would produce this effect. Furthermore, Dale and Laidlaw have shown that a characteristic shock-like condition can be induced by the injection of extremely minute amounts of histamin, a substance which Barger and Dale proved present in the mucosa of the small intestine.[9] The low pressure caused by this substance is not due to dilatation of the arterioles but apparently to dilatation of the capillaries with escape of plasma into the tissue spaces.[10] This effect is in consonance with the evidence for diminished volume of circulating fluid and concentration of the corpuscles in capillaries in human cases. French surgeons with extensive experience in the war, Delbet[11] and Quénu,[12] have independently come to the conclusion that the phenomena of secondary shock are the consequence of absorption of proteolytic products arising from the region of the injury; and Turck[13] has expressed similar ideas. There is the possibility that this *traumatic toxemia* may be closely related to "peptone" shock and that the toxic agent is, like "peptone," capable of making the capillary wall more permeable to the fluid portion of the blood. These suggestions must be regarded, however, as purely hypothetic. It is clear that a large field for investigation is opened by the facts above described.

A SECONDARY DAMAGE

Besides the primary fall of blood pressure induced by substances given off by the injured tissues, there is a secondary damage, which may result from the low blood pressure itself. As stated above, there commonly appears in clinical cases of shock a reduction of the alkali reserve of the blood, or an "acidosis" in the sense defined by J. L. Henderson. The reduction of the reserve corresponds roughly to the degree of lowering of blood pressure. In forty-four cases of shock and hemorrhage which I investigated at Béthune in 1917, the relations between blood pressure and the alkali reserve were as shown in the accompanying table.

When we consider that 50 per cent. by volume of carbon dioxid capacity is close to the boundary between normality and acidosis, it is obvious that the maintenance of a blood pressure above 80 mm. causes little alteration in the blood, but that a reduction of the pressure below this level results in a marked diminution of the sodium bicarbonate as indicated by the carbon dioxid given off. These clinical observations have been confirmed by experiments. A cannula introduced through the chest wall and tied into the pericardium permits fluid to be introduced into the pericardial sac. By varying the pressure of this fluid, the output from the heart can be varied or held at any

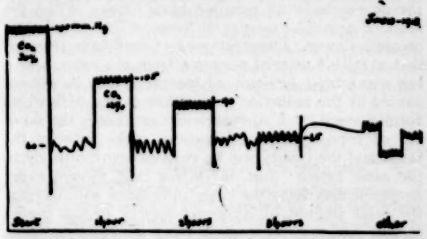


Fig. 4.—Record of an experiment showing the progressively harmful effects on the circulation of persistent low arterial pressure.

5. Seelig and Lyon: Surg., Gynec. & Obst. **11**: 146 (July) 1910.
6. Mann: Bull. Johns Hopkins Hosp. **32**: 208 (July) 1914.
7. Erlanger and Gasser: Am. Surg. **69**: 391 (April) 1919.
8. Vincent and Sheen: J. Physiol. **29**: 264 (April) 1903.
9. Dale and Laidlaw: J. Physiol. **41**: 318 (Dec.) 1910 and 499 (Jan.) 1911; **43**: 182 (Oct.) 1911; **52**: 355 (March) 1919.
10. Dale and Richards: J. Physiol. **52**: 110 (July) 1918.
11. Delbet: Bull. de l'Acad. de méd., Paris **80**: 13 (July) 1918.
12. Quénu: Bull. et mém. Soc. de chir. de Paris **44**: 496, 1918; Presse méd. **26** (Feb. 7) 1918.
13. Turck: M. Rec. **89**: (June) 1918; **90**: 471 (March) 1919.

given level. When this is done, the interesting result is observed that unless there has been considerable hemorrhage, a blood pressure in the neighborhood of 80 mm. of mercury results in no diminution of the alkali reserve. On the other hand, a reduction of the pressure to 70, 60 or 50 mm. will cause, at the end of half an hour or an hour, a marked reduction of this reserve (Fig. 4), varying directly with the degree of lowering of the blood pressure. There appears to be, consequently, a critical level in the blood pressure below which it may not fall without bringing about a change in the character of the blood itself.

In the theoretical article previously referred to the suggestion was offered that the acidosis observed in shock may, when it becomes sufficiently developed, take part in a vicious circle of causation which might lead to still further reduction of blood pressure. This idea was put to experimental test, and it was found that if a volatile anesthetic, such as ether, is employed, the alkali reserve can be very greatly reduced by injection of acid without any noteworthy fall of arterial pressure.[14] From these observations it appears clear that the reduction of the alkali reserve in the flowing blood has in itself no serious effect in the direction of augmenting the shock state.[15]

RELATION BETWEEN BLOOD PRESSURE AND ALKALI RESERVE

Systolic Blood Pressure, Mm.	Average Carbon Dioxid Capacity Vols. %
Above 80	49
70-80	43
60-70	35
Below 60	27

REDUCTION OF THE ALKALI RESERVE

The reduction of the alkali reserve may be accounted for on the basis of retarded blood flow. When the head of arterial pressure is lowered, the blood flow becomes slower. Observations by Gesell have revealed that a fall of arterial pressure from the normal to a low shock level (59 mm. of mercury) may be accompanied by the reduction of the flow to one fifth of its former speed.[16] Under such circumstances the number of trips which the corpuscles make between the lungs and the tissues will be reduced approximately to the same extent; thus, in such a case, though every corpuscle may leave the lungs fully laden with oxygen, the total amount of oxygen delivered to the tissues in unit time may be lowered, other things being equal, to one-fifth the usual amount.

It has been known for many years, chiefly from the work of Araki,[17] that any condition which diminishes the oxygen supply of the tissues, such as rebreathing expired air, or extreme slowing of respiration by morphin or by hemorrhage or poisoning with carbon monoxid, will lead to the production of lactic acid rather than carbonic acid as a tissue metabolite. Since lactic acid is nonvolatile, it will not be breathed away as is the case with carbonic acid. It will unite with the sodium of the sodium bicarbonate, forming sodium lactate, thus diminishing the alkali reserve. The carbon dioxid which is set free will, of course, be promptly eliminated.

DANGER FROM INSUFFICIENT OXYGEN SUPPLY

On the basis of the foregoing evidence, the acidosis which appears as the blood pressure is lowered, though not dangerous in itself, is an indication of a really serious danger, namely, the danger arising from insufficient oxygen supply.

The tissues of the body are known to vary greatly in their sensitiveness to oxygen want. Some muscles will endure total anemia for at least three hours without undergoing destructive alterations. On the other hand, certain nerve cells of the cerebral cortex cannot endure total anemia for more than seven or eight minutes without suffering changes so profound as to be irreversible. There is especial danger, consequently, that the nervous system will be damaged by persistence of the blood pressure below the critical level.

As shown in Figure 4, the blood pressure may be lowered to 60 mm. of mercury for an hour, and at the end of that time, if the pressure is allowed to rise, it will be nearly restored to its normal level. If now the pressure is again lowered to 60 mm. and held there for an hour, it does not rise so high; and when held to this low level for another hour, it may not rise at all. Examination of the blood under these circumstances indicates that there has been no material escape of fluid from the vessels. The failure of the pressure to rise after persistence at the low level is to be regarded, therefore, as dependent on the damage done to control of the circulation by the inadequacy of the circulation itself.

The facts just developed offer a basis for the similarity which has been repeatedly noted between the phenomena of shock and the phenomena of hemorrhage. After the blood pressure has once been lowered in shock, the effects on the organism are in all respects similar to those which are produced by a marked loss of blood. The dictum of the older surgeons that "shock is hemorrhage and hemorrhage is shock" is thus justified. The significance of this similarity in the treatment of both shock and hemorrhage will appear later.

SECONDARY SHOCK

A review of the evidence presented above permits us to follow the course of events in secondary shock. It may be thus summarized: Toxic material given off by smashed and dying tissue affects the circulation in such a way as to cause a lowering of the blood pressure; the low pressure involves a slowing of the circulation; the slow circulation involves damage because of diminished oxygen supply; and in consequence highly sensitive structures, especially nerve centers, become injured and lose their tonic activity. Thus, though in the early stages of shock the low blood

14. Acidosis and Shock, Report No. 9 of Special Committee on Shock and Allied Conditions, English Medical Research Committee, October, 1918.

15. In a discussion of theories of shock, Meltzer (Penn. M. J. 22: 129 [Dec.] 1918) has stated that I became "converted to the theory that the most essential factor in the production of shock is acidosis." I have never published the idea that there was in the acidosis of shock a primary cause for the low pressure. At one time I did advocate the use of sodium bicarbonate as a means of avoiding the extreme acidosis which may follow surgical operation on shocked men. Men who were in great distress from air hunger after operation were made immediately comfortable by alkaline therapy. Because of this effect the suggestion was offered that the injection be made during the period when the pressure is likely to fall; that is, during operation. Thus the pressure was held up and the alkaline content of the blood increased. At that time it seemed possible that anesthesia and operation might in themselves produce a harmful acidosis. Later experimental work proved that the acidosis was probably purely secondary to the fall of pressure and that the main object should be to avoid the fall. Alkaline therapy thus became limited to the relief of symptoms of extreme acidosis. Because alkaline therapy was suggested is no warrant for assuming the conviction that shock is primarily due to acidosis.

16. Gesell: Am. J. Physiol. 47: 491 (Jan.) 1919.

17. Araki: Ztschr. f. physiol. Chem. 15: 335, 1891.

pressure may be associated with constriction of the arterioles, in the late stages the arterioles may be relaxed because of such damage to the vasoconstrictor center that it no longer holds the vessels in tonic contraction.

TREATMENT OF SHOCK

The principles of the treatment of shock are suggested by a consideration of the facts and inferences outlined above.

In the first place, if a part of the body has become shattered and useless through injury so that it is impossible to save it, the harmful toxic effect of the torn tissue on the rest of the body may be avoided by applying tightly, as near as possible to the injured region, a tourniquet. Extreme care should be taken *not to remove the tourniquet before operating at a point proximal to it.* The reason for this urgency is that when tissues are deprived of their blood supply they undergo at a slower rate the same changes which they undergo when mechanically traumatized. During the course of military operations last year, several cases were reported of the sudden production of shock on removal of a tourniquet which had been applied to stop bleeding and left in place for an indefinite period. These observations obviously support the view of shock which has been outlined above. If a tourniquet used to stop bleeding is to be left in place for a long period, it should be applied at the most distal effective location. The surgeon must be guided in his decision to save or sacrifice the part by questions of viability, of gross infection in the excluded region, and of danger to the rest of the body from its retention. The danger of the tourniquet should lead, whenever possible, to the substitution of other methods of controlling hemorrhage. If the injured tissue can be removed promptly either by amputation or débridement, that should be done in preference to the application of a tourniquet.

Observations by Lieutenant Aub in the Surgical Research Laboratory of the American Expeditionary Forces at Dijon proved that there is a marked diminution of the heat production as the blood pressure is lowered. Furthermore, the man in shock sweats and thus loses heat both by evaporation and by greater conduction of heat through wet clothing, especially when he is exposed in cold weather. These considerations give a rational basis for the treatment of shock by warmth, a procedure universally recognized as of great value. Every effort should be made to avoid loss of heat from the shocked man or to restore heat that has already been lost. These objects may be attained by avoiding unnecessary exposure of the body and by use of hot drinks, warm water bottles, and proper blanketing.

The facts regarding the damaging effects of low arterial pressure which have been emphasized above should be emphasized again. If the pressure is allowed to remain below the critical level for a sufficient length of time, the vasoconstrictor center may be so profoundly affected that no measure will restore it to its normal condition. The transfusion of blood, for example, then results in only a temporary rise of arterial pressure, just such a rise as may be seen after total destruction of the center. As shown in Figure 4, the time element in the damaging effect of low pressure is of the utmost importance. If simple measures, such as warmth and fluids by mouth, do not in half an hour raise the pressure above the critical level of 80 or 90 mm. of mercury, the case should be treated as if it were a case of hemorrhage; and the treatment should be *prompt* in order to avoid the progressive damage as time passes. There appears to be little doubt that the best method for raising the blood pressure is transfusion of properly matched blood; by such means not only is the pressure raised but oxygen carriers are added to the circulation. If blood is not available, Bayliss' gum salt solution,[18] made of selected pure gum in physiologic sodium chlorid solution, or Erlanger and Gasser's[7] modification of this solution, may be employed. These colloidal solutions, if used early, can permanently raise arterial pressure. They do so by increasing the circulating volume of fluid. The corpuscles which are present are made to circulate more rapidly and thus to be employed more efficiently as oxygen carriers. There is no evidence that either the subcutaneous or intravenous injection of physiologic sodium chlorid solution has more than temporary value, if it has any beneficial effect at all.

SENSITIVENESS OF THE SHOCKED TO OPERATIVE PROCEDURES

In the earlier series of articles the sensitiveness of the shocked man to operative procedures was emphasized. Work done in cooperation with Lieutenant Cattell at the Surgical Research Laboratory at Dijon revealed the fact that not the operation but the etherization was the chief reason for the fall of pressure. If shock is already present in an animal, etherization until the wink reflex disappears may cause the pressure to fall 30 or 40 mm. of mercury (Fig. 4). On the other hand, the same degree of anesthesia may be induced by using nitrous oxid and oxygen in a ratio not exceeding 3:1 without any fall of blood pressure. There is little difficulty in bringing about satisfactory anesthesia or analgesia in shock cases with this ratio of the gases if there has been a previous dose of morphin. From suggestions which have been given above, it should be clear that morphin should not be given in such amount as greatly to retard respiration; and it should be clear also that at all stages deep anesthesia, or cyanosis or such rebreathing as would diminish the oxygen supply in the respired air, should be scrupulously avoided.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CANNON AND BERNHEIM

DR. GEORGE W. CRILE, Cleveland: During the campaign of 1917 the various teams of the Lakeside Unit with the British and in later campaigns, did nearly 1,000 transfusions of blood, the results of which confirm Dr. Bernheim's conclusions. Surgeons must feel gratified that physiologists have undertaken the solution of certain urgent practical problems. Dr. Cannon and many of his colleagues did most valuable work during the war. There are three practical reasons why we are unable to accept Dr. Cannon's work as conclusive: 1. Patients with extensive wounds of the extremities to which tourniquets had been applied so that the blood supply of the injured part was so completely blocked that no tissue poisons could have been introduced into the circulation, have passed into shock and have died from shock. Patients have died during operations from shock in which a tourniquet has completely controlled the circulation of the blood of the injured part. The tourniquet does not block nerve impulses; it does block circulation. 2. Nerve blocking does prevent shock. It is possible to kill animals by traumatizing nerve tissues without touching any other tissue. Indeed, if Cannon believes that the nervous system bears no part in shock, it would be

18. Bayliss: Intravenous Injections in Wound Shock, London, 1918.

an unfortunate conclusion from the surgical point of view. In this the work of men like Cabot, with low spinal anesthesia, is most illuminating. Cabot performed 180 amputations of the thigh—ninety under ether anesthesia in the usual way, ninety with low spinal anesthesia. The death rate of the latter series exactly reverses the death rate in the former series, that is, under ether anesthesia without blocking the spinal cord there were two deaths out of three; with the blocking of the spinal cord there was one death out of three. 3. Nitrous oxid is almost a specific preventive of shock. This action of nitrous oxid in the presence of toxins and proteins has been demonstrated conclusively in my laboratory as appearing from its influence on the nervous system. As a matter of fact, I believe that we must cling to the principle that a number of factors are concerned in the causation of shock. Of these various causative factors, Cannon's is one and in practical surgery one of the least important.

DR. OSWALD H. ROBERTSON, New York: While it is generally agreed that in cases of severe hemorrhage transfusion is the most effective method of treatment, I do not think that gum acacia solution, or gum saline as it is called, should be dismissed as having little value in this condition. The reports on the use of gum acacia solution in hemorrhage vary considerably. Some people are very enthusiastic, others say it has little or no effect. I think this diversity of opinion is due to several factors. I had an opportunity during the course of the war to investigate the subject in a number of our hospitals. Certain men reported very favorably from the clinical side; they got excellent results. Others are inclined to regard it as being the last resort if they could not get blood. It seems to me that the reason for this is that people, on the whole, are expecting gum acacia solution to act as a "cure-all." There were four classes of cases in which gum acacia solution was of very little use. In the first place, cases of shock or hemorrhage which had been in this condition for twenty-four to forty-eight hours responded very little to gum acacia, or to an injection of any substance, even blood. These patients had been in a condition of oxygen starvation so long that nothing would benefit them. Without morphin and rest any intravenous treatment is harmful if given before the patient has begun to recuperate. Third, in the case of those patients who had lost large quantities of blood, and who were very anemic, gum acacia solution increased the volume, the blood pressure rose temporarily, and then it dropped. What the patient needed was new blood. He did not get it, therefore, he died. In the fourth class, the patient often had a concealed gas gangrene and in these cases gum acacia solution was of no avail. Where gum acacia solution was used intelligently and with these considerations in view it had a very definite value and was successful in many instances. From intensive study of hemorrhage in the war we have learned the value of forced fluids in the treatment of hemorrhage. It is well known that considerable fluid is contained in the body tissues outside of the circulation. After hemorrhage this fluid is poured into the circulation in an attempt to make up the lost blood volume. If the hemorrhage has not been very severe sufficient fluid can be supplied by the tissues to make up for the lost volume and the pressure comes back to normal. If the hemorrhage is very severe the body tissues cannot supply sufficient fluid to make up the volume and outside assistance is needed. Even with moderate hemorrhage if the fluid reserves are low, before these can be made up fresh fluid must be given by forced fluids through the digestive tract. So that very soon the volume begins to rise and with it the blood pressure. Fluid may be given in very large quantities by mouth, as much as a liter, and by rectum. It is absorbed rapidly. In severe cases transfusion is needed. Forced fluids should be considered an essential part of the treatment of hemorrhage in all instances. Even in cases of severe hemorrhage transfusion makes up only a small part of the loss, the rest must be made up from the fluid of the tissues.

DR. HOWARD T. KARSNER, Cleveland: So far as the general proposition of the success of transfusion in cases of hemorrhage is concerned, I can support everything Dr. Bernheim said. From the point of view of a laboratory man, however, numerous points are to be considered and I feel that some exception must be taken to the statement of Dr. Bernheim that the citrate method has proved itself to be the best method of transfusion. Certain methods have been tried with certain degrees of success. I have been particularly impressed by a paper by Lindemann on the transfusion by the needle syringe method in which the blood is transferred from one individual to another almost directly, with a minimum of contact with foreign surfaces. It is unqualifiedly true that the longer the blood stays out of the body the more likely a change in the course of transfer. The more immediately the blood is changed from donor to recipient the better the results are likely to be. Of course, I am not taking into account the amount of blood transferred. The addition of chemicals, however, places in the blood a factor which otherwise would not have to be considered. It adds a variable and a considerable number of variants. As regards anaphylaxis and anaphylactic symptoms, I have seen nothing which would indicate that anaphylaxis plays any part in regard to transfusion. In the matching of blood we have a problem which affects the individual patient. I would like to put myself on record as favoring the grouping of donors and of patients. I am convinced that the safest method of matching donor and recipient is to have them in the same group. This matter has been the subject of investigation in my laboratory for the last year, with the collaboration of Dr. Reckert. The principle of serum for testing blood for transfusion is unsatisfactory if we are to preserve this serum for any length of time. After the lapse of five or six weeks the serum not only lost its potency but also its specificity. The final comment is on the matter of simply matching up the recipient's serum against the donor's corpuscles, maintaining that if in a test tube or slide it does not agglutinate the transfusion is safe. I believe in testing blood and in order to make this test the serum must be preserved in some other way than by drying.

DR. R. PICQUÉ, Bordeaux, France: During the last year of the war we experimented with thirty-six cases of blood transfusion: thirty-two were cases of hemorrhagic shock, with twenty-one successes; four were cases of operative shock, with two successes. As guides for transfusions we utilized, first, clinical examination of the patient, and second, the blood count. In two thirds of the cases the scale as per Depage and Govaertz (de la Panne) was proved correct. But in one third of the cases, when seen near the lines, we noted that in the recently wounded (first to sixth hour), though the men were almost bloodless from severe hemorrhage of a most serious type, the leukocytes were almost normal in number. Third, the blood pressure is a guide. The instrument of Pachon (of Bordeaux), which is ultrasensitive, allows us to follow the blood pressure from hour to hour and to seize the moment when loss from hemorrhage indicates instant transfusion. In such cases, either we transfuse first then operate; or we operate first and transfuse afterward. Either immediately after the venous injection, or later when serotherapy has proved unable to sustain the blood pressure, and at all times in order not to waste blood we only practice transfusion on those whom we judge able by a radical operation to protect from infection for transfusion itself has not a single action against infection. As to results, in these picked cases we have obtained, first, twenty-one "resurrections" among simple, severe hemorrhages. Second, two successes among serious cases of operative shock, where serotherapy had proved absolutely impotent. The wounded are constantly watched and studied in well warmed rooms, either in the divisional ambulance or the subterranean surgical stations. The study of the cases is made by trained, experienced surgeons or nurses. The blood pressure instrument permits the surgeon to keep in instant touch with the patient's condition before and after transfusion. Those giving blood for the transfusion are the surgeons, dressers, nurses of the ambulance who after administering 500 to 800 grams of their blood still continue to work at the bedside of the wounded. We have not studied the agglutination and we have not observed any bad effects among our cases, except for two cases of hemoglobinuria, with serious results. We endorse use of the ampule of Kimpton and the citrate method of Jonde.

DR. RICHARD LEWISOHN, New York: It is a great gratification to me that the sodium citrate method, which I first suggested in January, 1915, was adopted officially by the American Expeditionary Forces. The safety of the method is based on the atoxicity of the dose. The dose of sodium citrate is so small that it will not produce any toxic symptoms. Another important factor is that sodium citrate, though it prevents coagulation of the blood outside of the body, shortens the coagulation time temporarily when introduced into the body. This shortening is one of brief duration and the blood coagulation time falls back to pretransfusion time in about twenty-four hours. The advantages of the method are its simplicity, its flexibility, the possibility of the transfer of blood from one place to another, the very important factor that donor and recipient do not have to be together in the same room and do not have to be attached to each other by some form of apparatus, and that this transfusing can by simplicity of technic be repeated as frequently as we want to do it. The disadvantage of the method is the occurrence of chills. Chills occur in about 20 per cent. of the cases. The syringe methods and the Unger apparatus usually cause chills in 5 to 10 per cent. of the cases, so that the disadvantage is really not very great. A few points in the technic are very important, the proper insertion of the cannula into the vein and the use of very large cannulas for the donor so that the blood runs out very rapidly. My personal experience comprises about 300 cases. I have never seen any bad results. In another field of blood transfusion we have to make improvement and that is in cases of sepsis. This improvement will lie in the rapid immunization of the donor. At present it takes from two to three days to immunize the donor for a septic patient. If we can do this in a few hours, another field for transfusion will be opened up for us.

DR. WALTER B. CANNON, Boston: Dr. Bernheim suggested that efforts should have been made in France to assure transfusion of blood rather than injection of gum-salt solution. The resuscitation teams in the A. E. F. received about sixteen hours of instruction; about one hour was spent in considering gum-salt solution, and most of the rest of the time was spent in practicing blood transfusion. As long ago as last July we urged that gassed men be placed near the shock ward to provide blood for shock cases. And when later the badly wounded were found segregated, with the result that there was no possibility of getting blood for them, we called attention to the handicap they thus suffered, and again urged putting lightly wounded men near them to supply blood for transfusion.

Dr. Crile mentions lack of agreement regarding the toxic origin of shock. Possibly there is more agreement than he realizes. In the last report of the English Medical Research Committee on Shock, surgical, biochemical, physiologic and pathologic judgments all came to the support of "traumatic toxemia" as a highly important factor in the causation of shock. Furthermore, when the facts reported above were presented last October before the Société de biologie in Paris, Delbet, the well-known French surgeon, remarked that the meeting would be historic because biologists, physiologists and surgeons had for the first time agreed on the toxic origin of shock. Dr. Crile has argued that shock is of nervous origin because he has seen alterations in nerve cells in tissues taken from shocked animals. These alterations may be present in nerve cells, but one may disagree with Dr. Crile's interpretation of them. Dolley, the cytologist who worked with Dr. Crile, admitted that the same cellular alterations seen after shock are produced by hemorrhage. But the low blood pressure of shock is equivalent to hemorrhage. The changes in nerve cells taken from the shocked animal may be interpreted, therefore, not as the cause, but as the result of shock. As to the practical bearings of our views, Dr. Crile and I agree in being disturbed about the same thing, that is, rough surgery. He is fearful lest rough surgery affect nervous tissue, and I am fearful lest it may affect all tissues, including nervous. I do not wish to detract in the slightest from the moral effect of Dr. Crile's teachings; I would only insist that surgeons must not unnecessarily injure any tissues.

DR. BERTRAM M. BERNHEIM, Baltimore: Dr. Crile is interested in the nerve and Dr. Cannon in tissue; both are interested in surgery, and I am interested to see that they do not have any loss of blood. So that if we all get together by mixing a little blood with the tissue and nerves it will be all right. During the war we must consider the greatest good to the greatest number. Any man who maintains that the Kimpton-Brown method or the Pederson method is one twentieth as good as the citrate method has not been in France. I was rather surprised to hear Dr. Robertson make excuses for gum acacia solution. The advocates of gum acacia solution are always making excuses for it. That in itself should rule it out. They are always accusing the other fellow of not using it right. I have never found a man who had any good to say of it. There are men in this audience whose experience with it proved disastrous. Certain men here have seen deaths from it. It not only did not help, it killed men. While I was in France I did no transfusion. My sole object in reading this paper was to show that substitutes for blood are not of any help, and that we have a method of doing transfusion which any one can use. What I want to insist on is that the laboratory men find a method of preserving blood so that you can go to a corner drugstore and get half a liter just as you can anything else.

SCIENTIFIC MEDICINE—YESTERDAY AND TOMORROW*

GRAHAM LUSK
NEW YORK

Last winter I heard a talk by Galsworthy at the University Club in New York. His strain was that men who had fought in the war had become mentally addicted to the contemplation of their own past and that they could not look forward with hope or enthusiasm to the future. It seemed utter nonsense; and yet this theme has been so stressed that it has affected seemingly well balanced men. Only last Sunday a little girl visiting her grandfather told him that her mother was spending the morning studying pathology, while her father, home from France three months, was occupied in chasing butterflies. The young men of this country cannot become addicts of the pastime of butterfly chasing when the advance of the world is so largely in their hands.

The fathers of men now living, fathers who had been engaged in desperate fighting for four long years of civil war, returned after the war to their former occupations, some of them following medicine with joy and in careers of distinction. Galsworthy thoughtlessly disparaged the character of that war, the battles of which were much costlier in human life than those of the Franco-Prussian war of 1870, and a war in which one man out of every four living in the Confederate States was under arms: as large a proportion as served in Great Britain during the recent conflict. Do we, who are most of us the descendants of this race, propose to chase butterflies when the opportunity for carrying on the treasured learning of the world and for its future development is placed fairly and squarely on our shoulders? The meeting held today answers this in the negative.

Twenty years ago (June 16, 1899) Theodore Janeway, then 27 years old, wrote me that he would give up an idea he had had of going to New Haven to teach pharmacology at the Yale Medical School, and that he would conduct an "elementary clinic" for the benefit

* An address delivered before the American Society for Clinical Investigation.

of second year medical students. I think it may be of interest to read that letter:

Your letter came to me at a most opportune moment. I had been going over the points of our discussion and arguing with myself both pro and con, and the more I thought the more everything seemed to point to the folly of giving up what really most appeals to me in medicine, and opportunities which could hardly come again, for an uncertainty. It seemed more and more possible that I might much more nearly accomplish what I want to in my life where I am and where everything seems open to me.

Then came your most encouraging words, which made probabilities of possibilities and made me feel that if you were working for such ends in New York and had such hopes, that Bellevue could be made a school which should take some part in the advance of true medical knowledge and not merely diffuse what is already known. I appreciate your letter highly and I want to thank you very much for it.

I have told Dr. Biggs that I would take all of the elementary clinic next year that they will give me and I will do my best to make it carry out the ideas that you and Dr. Dunham have, so far as they seem capable of translation into actual cases available. I am reading Krehl now and I find much that is suggestive, though of course his method is the reverse of what one would pursue in instruction from the concrete case. It is nice reading, and his reasoning is free from the desire to prove more than the facts warrant.

I trust it will be possible for me to keep in touch with your work and Dr. Dunham's next winter and especially with your enthusiasm, and that I may be able to persuade the students to regard symptomatology as the physiology of the "sick life." It will certainly be a most interesting experiment from my side.

This letter gives no picture of New York medicine as it was then. One should remember that Meltzer, at the time, was a practicing physician, snatching such moments of rapture as were his when he drove down Fifty-Ninth Street, tied his horse to a lamp post near the P. and S. and, with his coachman who acted also as laboratory servant, entered the dingy recesses of that college and ascended to the laboratory of physiology, there to perform some fundamental experiment, perhaps one on the nature of shock, for example. At that time Herter had just undergone metamorphosis from a specialist in nervous diseases into a physiologic chemist. Park had established a modern laboratory in the board of health. But besides this there was little to encourage the adventurer into clinical science. As matters of fact be it recorded that a few years later the medical faculty to which Janeway was attached refused him a teaching position in Bellevue Hospital, though the salary belonging to the position had been raised from outside sources, and the same faculty held a solemn, special meeting to discipline me because I had publicly before the students expressed opinions favorable to the Johns Hopkins Medical School. These were days when there appeared to be no future for clinical science, days in which there was almost no intellectual, social or financial influence making for its welfare. And yet we in this country, since that time, have made great headway in this direction, not on account of the influence of any special men, but because the principle that the primary mission of a medical school, "to take some part in the advance of true medical knowledge and not merely to diffuse what is already known," is everlastingly right. This society bears witness to such a conception and will never forswear its faith and take to chasing butterflies.

It is to be hoped that German medical science will not fall into decay as did that of France after 1870; but there are indications that such a fate awaits it. It has been reported from Munich that immediately after the armistice a society for the conservation of German intellectual interests was formed, Friedrich von Müller, Germany's greatest professor of clinical medicine, representing medicine. A month later it was reported that an academic meeting, held Dec. 16, 1918, was broken up by representatives of soldiers and sailors who, armed with guns, revolvers and hand grenades, entered the hall in which the meeting was taking place. The *Münchener medizinische Wochenschrift* describes this under the caption "Die Herrschaft des Terrors" (The Reign of Terror) and states that the presence of mind of those composing the gathering alone prevented disastrous consequences.

About 1890, referring to the prevailing vogue of General Boulanger in Paris, Carl Voit said to me that unhappy political conditions acted as a depressant on a wonderfully gifted people. One can easily imagine that a similar depression will fall on Germany. Even before the war, German science had shown signs of decay. I remember traveling up the Rhine with a distinguished Austrian professor after we had attended the last international physiologic congress held at Groningen in 1913. He said to me:

The best papers read at the congress were by English and Americans. The best thing shown there was Abel's artificial kidney. You heard that disgraceful row between Röhmann and Abderhalden. Just because Abderhalden had gained a little fame, Röhmann was determined to pull him down. The Americans and the English would not have behaved that way. It is because the Germans are not "gentlemen," as you English speaking people say.

Alas, in such a comparatively superficial attribute as bad manners one may perhaps find the interpretative symbol of the cause of the war. I have heard it queried whether the bad manners of political and military leaders of the German people were not the primary curse that brought the world near to the brink of hell.

There were many of us who formerly believed that German appreciation of our scientific work meant that such work was good. The incentive to this attitude has passed. But we may look in compensation for an appreciation by British men of science which, in keeping with British character, will not be outspoken but which nevertheless will be keenly attentive to the better class of work that we may do. I have heard it stated that, while the French are brilliant and the Germans thorough, the British are both. If you look back into their history for three hundred years there is no hiatus in their production of distinguished, creative, scientific minds. Those who doubt this statement should read the impressive "General Physiology" of Bayliss. We may also expect much from a reawakened France.

But above all we must learn to appreciate honest, careful work done by those who live around us, learn not to steal another man's ideas, and learn also how to bear adverse personal criticism.

A few days ago I was chosen arbiter in a dispute between some New York and Boston people. I said to the parties concerned that their discord and criticism of each other had led to the accomplishment of much better work than if all had been harmonious; and, though at first they were somewhat surprised at the statement, they freely admitted its truth.

I once visited Pflüger at the time when he was engaged in a vitriolic polemic arraignment of Voit. A

few days later in Munich I told Voit that I had called on Pflüger.

"But he did not receive you?" "Yes."

"But he did not know whose pupil you were?" "Yes."

"So, Sie sind in dem Löwenkäfig gewesen!" (So you have been in the lion's cage!)

I remarked that in conversation Pflüger was willing to grant the possibility of the production of sugar from protein to which Voit smilingly replied:

"Ja; der Löwe wird bald zahm." (Yes; the lion will soon become tame.)

There is no doubt that irritating criticism is a highly beneficial stimulus. Only the vain refuse to hear it; and the teachings of such become dogmatic, their investigations futile.

We Americans have learned much from England, France, Italy and Germany. We have brought over the seas their knowledge and have set it up here as a common heritage. Sometimes we have advanced beyond their methods, and at other times have fallen far short. We have just helped to rescue Europe from torment. In comparison with ourselves they are living in abject poverty, and we are selling to them the necessities of life, wheat and cotton, at prices which are highly profitable to our people. They are under great financial strain in the struggle for existence, and will be so for many years. In this great land of ours, which is overflowing with opportunity and abundance, it is of very especial importance to elevate our intellectual standards. Many scientific men hardly seem to realize the heavy world responsibilities which have been placed on us.

Money alone will not produce a creative mind; money may well spoil such a mind. The best work does not always come from the most richly endowed institutions, nor from those laboratories that have the largest number of assistants and laboratory servants. It is the spirit that matters. This spirit cannot be manufactured according to a formula. It belongs to the genius of the people. The spirit animating this society gives it the power to achieve greatly in the advancement of American medicine. This spirit is the greatest present asset of American medicine.

The members of this society, urged on by the vision of the condition of the world, have the honorable privilege to render high service for the benefit of all mankind, perhaps winning through scientific achievement the medical leadership of the world.

477 First Avenue.

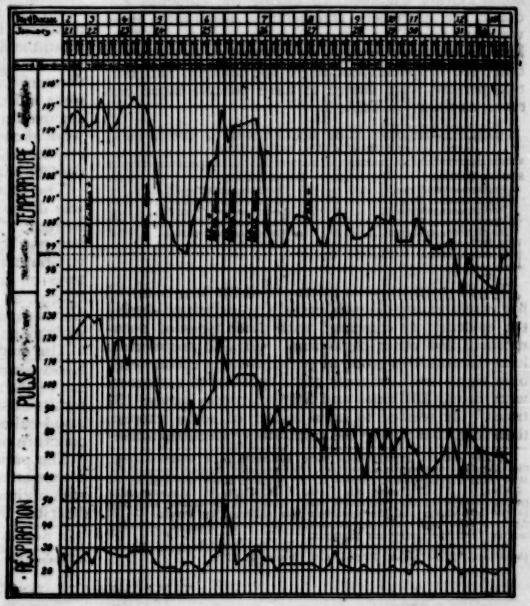
Japanese Opium Trade with China.—In an article which appeared in the *North China Daily News*, Dec. 17, 1918, it is stated that the trade in morphin is still flourishing. As morphin cannot, however, be purchased in Europe, the seat of industry has been transferred to Japan, where the Japanese are now manufacturing morphin. Wholesale contraband traffic between Japan and China is carried on. It is conservatively estimated that during the last year 18 tons of morphin were imported by the Japanese into China, and the amount is said to be steadily increasing.

TYPE I PNEUMOCOCCUS LOBAR PNEUMONIA AMONG PORTO RICAN LABORERS

AT CAMP JACKSON, SOUTH CAROLINA

JAMES H. PARK, JR., M.D. (HOUSTON, TEXAS)
First Lieutenant, M. C., U. S. Army
AND
H. T. CHICKERING, M.D. (NEW YORK)
Captain, M. C., U. S. Army
CAMP JACKSON, COLUMBIA, S. C.

Shortly after the epidemic of acute respiratory disease appeared at Camp Jackson in September, 1918, 1,653 Porto Rican laborers arrived in camp direct from Porto Rico to be employed in the construction work incident to the enlargement of the cantonment.



Effect of serum in a case of Type I pneumonia of the right and left lower lobes: *B. C.*, blood culture; +, positive; —, negative.

A large proportion of these men were poorly developed individuals, most of whom suffered from chronic hookworm infection as well as from other intestinal parasites. They appeared undernourished and were obviously underclad, with their Palm Beach suits and Panama hats, for the almost freezing nights of South Carolina in November and December.

Soon after the arrival of these Porto Rican laborers, respiratory infections developed among them, and 1,003 were admitted to the base hospital with the diagnosis of influenza. Of these, 220 exhibited signs of complicating pneumonia, and sixty-seven died, a mortality of 30.4 per cent.

During the height of the epidemic, it became impossible to take cultures of the sputum of all individuals

having pneumonia, but as soon as the hospital assumed approximately its normal condition, the careful examination of the sputum of all cases exhibiting pulmonary lesions was again resumed.[1]

During the early part of the influenza epidemic among the Porto Ricans, atypical types of pneumonia were seen; but later, beginning about Dec. 15, 1918, a number of patients were admitted who exhibited the more usual signs of lobar pneumonia.

In the early part of the summer, in May and June, twenty-two of fifty-one cases of pneumonia were Type I pneumococcus infections. From that time on until Sept. 15, 1918, only twelve more cases of Type I pneumococcus infection occurred out of 122 cases of pneumonia. While the statistics covering sputum and blood culture examinations during the influenza epidemic are extremely fragmentary, apparently there were but few Type I pneumococcus infections of the lung, as but three patients were found to be harboring that type of pneumococcus in the sputum, and only two persons were shown to have positive blood cultures, as shown in Table 1.

TABLE 1.—FREQUENCY OF OCCURRENCE OF TYPES OF PNEUMOCOCCUS INFECTIONS

Sputum Cultures:	No.	Blood Cultures:	No.
Pneumococcus Type I	9	Pneumococcus Type I	2
Pneumococcus Type II	47	Pneumococcus Type II	17
Pneumococcus Type III	29	Pneumococcus Type III	9
Pneumococcus Type IV	194	Pneumococcus Type IV	16
Staphylococcus aureus	18	Staphylococcus aureus	2
B. influenzae	13	S. hemolyticus	1
S. hemolyticus	8		

Type I pneumococcus infections of the lung occurred but rarely among the soldiers of Camp Jackson during the epidemic, as compared with other types of pneumococci and other organisms. Of 312 postmortem lung cultures, this group of organisms was encountered only eight times, whereas other types of pneumococci were found 131 times and *Staphylococcus aureus* 153 times.[2] It seemed to be a matter of some interest, therefore, that among the respiratory infections affecting a group of Porto Rican laborers, the incidence of Type I pneumococcus infection should be much greater than among the soldiers in camp.

Table 2 shows the incidence of the various types of pneumococcus among the white and black soldiers, and among the Porto Ricans, over a period from Dec. 15, 1918, to Feb. 1, 1919.

TABLE 2.—INCIDENCE OF VARIOUS TYPES OF PNEUMOCOCCUS

Type	White	Black	Porto Rican
Pneumococcus I	1	2	24
Pneumococcus II	4	2	0
Pneumococcus III	4	0	2
Pneumococcus IV	97	17	16

The Porto Rican laborers lived under crowded conditions in wooden buildings. Fourteen barracks were used, 120 feet long by 20 feet wide. The bunks were arranged in two tiers, the lower being about 3 feet from the floor. In this way, from 120 to 160 men were accommodated in each building. The five kitchens, formerly occupied by the depot brigade, were used as mess halls. On account of the cold, the screens were removed and the openings boarded up. The latrines were about 200 yards from the barracks. Under these conditions there was abundant opportunity for close contact and wide temperature variations.

The first Type I infection among the Porto Ricans was discovered by a routine lung puncture made postmortem. This patient, for some unexplained reason, had not been transferred to the pneumonia ward, and no sputum examinations had been made. From that time on all cases of pneumonia among the Porto Ricans, as well as among the soldiers, were treated in wards especially designed for pneumonia, and cultures were made with as much dispatch as possible.

The sputum was cultivated by streaking directly on blood agar plates, by mouse inoculations, and by the use of the Avery 1 per cent. glucose blood broth. The results of sputum cultures were checked up by repeated blood cultures and by cultures made from exploratory puncture of the lung when indicated.

The patients in whom evidence of Type I pneumococcus infection were found were treated intravenously with antipneumococcus serum according to the method described by Cole.[3]

1. The sputum examinations were all made in a separate room, the so-called pneumonia laboratory, by specially trained technicians, Miss Pirie Davidson and Private R. A. Ambler, under the supervision of Capt. H. T. Chickering and Lieut. J. H. Park, Jr. As soon as a patient arrived in the pneumonia ward, notice of his arrival was sent to the laboratory, and the specimen was collected by Private W. J. Archer, who was instructed concerning the importance of obtaining sputum from the deeper air passages.

2. Chickering, H. T., and Park, J. H., Jr.: Staphylococcus Aureus Pneumonia, J. A. M. A. 72: 617-626 (March 1) 1919.

3. Avery, O. T.; Chickering, H. T.; Cole, R., and Dochez, A. R.: Acute Lobar Pneumonia, Prevention and Serum Treatment, Monograph 7, Rockefeller Institute for Medical Research, 1917.

TABLE 3.—TYPE I CASES *

Case No.	Color and Age	Date Admitted and Day of Disease	Temperature on Admission	Pulse and Respiration	Involvement	Leukocytes	Blood Culture and Method	Stimulation	Amount of Serum, C.c. and Serum Sickness	Result	Hookworm	Wassermann Test	Remarks
1. 42482	P.R. 21	12/16/18 ?	108 crisis 12/23/18	80-124 18-44	Lobar Pn. R. and M. L. L. L.	28,000 Polys. 89%	Neg. Mouse	Tincture of digitalis, 16 c.c.	355 None	Recovered, 12/23/18	+	Not taken	Relapse; left lower lobe; no serum, 12/31/18; recovered 1/7/19
2. 43162	P.R. 28	12/29/18 ?	103.2 crisis 1/1/19	80-100 18-48	Lobar Pn. R. L. L.	13,700 Polys. 50%	+ II Avery	Tincture of digitalis, 7 c.c.	200 None	Recovered, 1/1/19	+	Not taken	
3. 43706	P.R. 24	1/7/19 ?	104.2 lysis	72-128 18-32	Lobar Pn. R. U. L.	14,800 Polys. 84%	Neg. Mouse	0	1/10/19 100 None	Recovered, 1/13/19	—	Not taken	
4. 43922	P.R. 22	1/9/19 ?	104 lysis	72-124 18-48	Lobar Pn. Lt. lung	18,000 Polys. 84%	Neg. Mouse	Tincture of digitalis, 0 c.c.	400 None	Recovered, 1/25/19	—	Not taken	1/16, acute suppurative otitis media, right
5. 42730	P.R. 48	12/20/18 ?	104	74-128 18-44	Lobar Pn. L. lung	12,000 Polys. 90%	+ I Avery Mouse	Tincture of digitalis, 0 c.c.	350 None	Died, 1/9/19	—	Not taken	1/5/19, thoracotomy; facial erysipelas, empyema, left
6. 42909	P.R. 24	12/24/18 4th	100.2	60-114 18-44	R. lung L. L. L.	15,400 Polys. 80%	Neg. Mouse	Tincture of digitalis, 5 c.c.	115 18th day	Died, 1/7/19	—	Not taken	Onset gradual; died suddenly, cause unknown; embolus ?
7. 43852	P.R. 26	1/16/19 ?	105.4 lysis	68-120 18-50	Bron. Pn. R. lung L. L. L.	24,600 Polys. 89%	Neg. Mouse I. + B.I. Inf.	Tincture of digitalis; strychnin; camphor	1,850 None	Recovered, 1/19/19	+	Not taken	Old serum used
8. 43278	P.R. 24	12/31/18 ?	102.4	68-104 18-40	Bron. Pn. bilateral	30,000 Polys. 89%	Neg. Mouse	None	300 None	Recovered, 1/7/19	+	Not taken	

TABLE 3.—TYPE I CASES *—*Continued*

Case No.	Color and Age	Date Admitted and Day of Disease	Temperature on Admission	Pulse and Respiration	Involvement	Leukocytes	Blood Culture and Method	Stimulation	Amount of Serum, C.c. and Serum Sickness	Result	Hookworm	Wassermann Test	Remarks
9. 43401	P.R. 22	1/3/19 †	102.8	80-120 18-40	Bron. Pn. bilateral	13,400 Polys. 92%	Neg. Mouse	Tincture of digitalis; strychnin	350 None	Recovered, 1/15/19	—	Negative	
10. 43984	P.R. 19	1/9/19 †	104 lysis	72-124 18-42	Lobar Pn. L. lung	18,000 Polys. 94%	Neg. Mouse	Tincture of digitalis; strychnin	450 None	Recovered, 1/18/19	+	Negative	Acute otitis media, right; N. S. 1/15
11. 42991	P.R. 22	12/26/18 †	103 crisis	72-136 20-48	Lobar Pn. L. L. L.	17,600 Polys. 92%	Neg. Mouse	Tincture of digitalis	365 None	Recovered, 1/4/19	+	Negative	
12. 43439	P.R. 22	1/2/19 4th	100.6 crisis	84-120 18-40	Lobar Pn. R. L. L.	19,200 Polys. 91%	Neg. Avery	Tincture of digitalis	200 None	Recovered, 8th day	—	Negative	Onset, sudden
13. 43177	P.R. 18	12/29/18 †	101 crisis	70-132 18-36	Lobar Pn. L. L. L.	13,700 Polys. 92%	Neg. Mouse	Tincture of digitalis	550 None	Recovered, 1/5/19	—	Negative	
14. 42884	P.R. 18	1/1/19 1st	103 crisis	80-120 18-34	Lobar Pn. L. L. L.	12,000 Polys. 83%	Neg. Mouse	None	400 None	Recovered, 7th day	+	Negative	Onset, sudden
15. 43334	P.R. 19	1/1/19 †	103.4 lysis	80-120 18-48	Lobar Pn. R. U. L.	8,200 Polys. 75%	Neg. Mouse	Tincture of digitalis	365 None	Recovered, 1/7/19	+	Negative	
16. 44397	P.R. 17	1/15/19 3d	105.4	68-144 22-48	Lobar Pn. L. lung	18,000 86% 20,000 86%	Neg. Mouse	Tincture of digitalis	900 None	In hospital, doing nicely	—	Negative	Onset, sudden; costectomy and thoracotomy, 1/13/19; secondary pocket, left lower chest, 2/5/19; thoracotomy, 2/6/19; empyema left chest, 1/25/19
17. 42783	P.R. 23	12/21/18 †	101.8 lysis	72-120 20-38	Lobar Pn. L. lung	17,200 Polys. 87%	+ 1/8/19 Mouse	Tincture of digitalis	1,000 None	Recovered, 1/27	—	Negative	Old serum used; 1/21/19, abscess right superior scapular region
18. 43401	P.R. 22	1/3/19 †	102	84-120 20-38	Lobar Pn. L. L. L.	18,000 Polys. 90%	+ I Mouse	Tincture of digitalis	600 + 1/23/19	Recovered, 2/2/19	—	Negative	Slowly resolving pneumonia
19. 43141	P.R. 20	12/29/18 2d	102	88-128 20-40	Lobar Pn. L. lung	16,000 Polys. 82%	Neg. Mouse	Tincture of digitalis	300 None	In hospital, doing nicely	+	Negative	Onset, sudden; thoracotomy, left, 1/10/19; empyema, 1/5/19
20. 43401	P.R. 18	12/27/18 †	103.6	84-146 20-40	Lobar Pn. R. L. and M. L.	40,000 Polys. 92%	+ Mouse	Tincture of digitalis	315 None	In hospital, doing nicely	—	Negative	Thoracotomy, 1/6/19; empyema, 1/5/19
21. 42911	P.R. 22	12/24/18 2d	102	80-124 20-30	Lobar Pn. L. L. L.	15,600 Polys. 89%	Neg. Mouse	None	0 None	+	—	++	Onset, sudden; suppurative submaxillary adenitis, 1/7/19; erysipelas, face, 1/9/19; pericotitis, right tibia and fibula, 1/14/19
22. 43480	P.R. 20	1/3/19 1st	104.6	76-136	Lobar Pn. R. L. L.	29,800 Polys. 94%	Neg. Mouse 1/7/19	Tincture of digitalis	250 None	Recovered, 1/11/19	—	Negative	Onset, sudden
23. 43025	P.R. 45	12/27/18 †	101.6	70-120 18-40	Bron. Pn. bilateral	15,200 Polys. 89%	Neg. Mouse 1/2/19	Tincture of digitalis	250 None	Recovered from pneumonia 1/4/19	—	Negative	Left myringotomy, 1/10/19; mastoidectomy, left, 1/25/19; acute otitis media suppurativa, left, 1/10/19; acute suppurative mastoiditis, left, 1/17/19
24. 43540	P.R. 34	1/4/19 †	101.6	80-120 18-36	Lobar Pn. R. U. and L. lobes	12,800 Polys. 87%	Neg. Avery	Tincture of digitalis	550 + 1/20/19	Recovered from pneumonia 1/12/19	+	++	Slowly resolving pneumonia; phlebitis, left leg, 1/9/19
25. 43656	P.R. 19	12/23/18 4th	104.6	80-108 20-32	Lobar Pn. L. L. L.	?	Neg. Avery Mouse	Tincture of digitalis, 2 c.c.	0 None	Recovered, 6th day	—	Negative	Onset, sudden; recovered before type obtained
26. 42912	P.R. 18	12/24/18 †	103.2	80-144 20-38	Bron. Pn. bilateral	11,900 Polys. 87%	+12/25/18 Mouse 12/25/18	Tincture of digitalis	100 †	Recovered from pneumonia 1/4/19	+	Negative	Came in with right parotitis; dental caries; chronic alveolar abscess; acute arthritis, both hips
27. 42857	P.R. 19	12/23/18 2d	103.4 lysis	72-120 20-34	Lobar Pn. L. L. L.	18,600 Polys. 89%	+ I Mouse	Tincture of digitalis	250 + 1/12/19	Recovered, 1/2/19	+	+	Onset, sudden
28. 42611	P.R. 19	12/28/18 †	100 lysis	80-126 18-42	Bron. Pn. bilateral	12,000 Polys. 87%	+ I Mouse	Tincture of digitalis; atropin; strychnin	300 None	Recovered, 12/28	+	Negative	Relapse, 1/11/19; Type III from sputum; recovered, 1/17/19
29. 43539	P.R. 37	1/4/19 †	101.4 crisis	66-120 18-38	Lobar Pn. R. U. and L. U. L.	10,600 Polys. 86%	Neg. Mouse	None	700 None	Recovered, 1/11/19	—	Negative	
30. 42529	P.R. 17	12/16/18 †	104.3 crisis	80-144 20-44	Lobar Pn. R. U. and R. L. L.	16,650 Polys. 91%	Neg. Mouse	Tincture of digitalis; whisky	300 None	Recovered, 12/23/18	—	Negative	Abscess, sacral region, 1/5/19
31. 43731	P.R. 42	1/7/19 †	104.2 lysis	72-120 18-42	Lobar Pn. R. L. L.	12,800 Polys. 90%	Neg. Mouse	Tincture of digitalis	100 None	Recovered, 1/12/19	—	Negative	
32. 42910	P.R. 22	12/24/18 5th	103 crisis	76-108 18-36	Lobar Pn. R. L. L. L. L. L.	14,000 Polys. 84%	Neg. Mouse	Tincture of digitalis	85 None	Recovered, 12/28/18	+	Negative	Onset, gradual
33. 42019	P.R. 37	12/8/18 †	100 lysis	80-140 20-40	Lobar Pn. R. L. L. R. M. L.	5,800 Polys. 90%	Neg. Mouse	Tincture of digitalis	100 None	Recovered, 1/16/19	+	Negative	Serum treatment not followed up; result not due to serum; otitis media acuta, left, non-suppurative, 12/13
34. 42660	Col. 26	12/18/18 2d	104.2 lysis	72-120 20-40	Lobar Pn. L. L. L.	16,400 92%	Neg. Avery Mouse	Tincture of digitalis	100 None	Recovered, 8th day	+	Negative	Onset, sudden
35. 43231	Col. 22	1/1/19 2d	101-104	80-120 18-36	Bron. Pn. R. L. L.	16,000 92%	Neg. Avery Mouse	0	100 None	Recovered, 5th day	—	Not taken	Onset, sudden; very toxic; prompt change after serum
36. 44775	white Co.B. M.P.	1/21/19 2d	104 lysis	80-120 20-48	Lobar Pn. both lowers	14,400 89%	+ — after 2d serum Mouse	Tincture of digitalis	400 None	Recovered, 11th day	—	Negative	Onset, sudden

* No evidence of malaria was found in any of the cases. When there were complications, these are stated in the last column.
† Right lower and middle
‡ + I means positive for Type I pneumococcus.
§ Positive for Type I pneumococcus and Bacillus influenzae. Refers to organisms recovered from the mouse.

As will be seen in Table 3, these Type I pneumococcus infections among the Porto Ricans resembled more nearly the kind of pneumonia ordinarily encountered in practice, rather than the type of pneumonia experienced as a complication of the recent epidemic of respiratory infection. When a history could be obtained, the onset, in most instances, was found to have been sudden. The type of involvement was, clinically, lobar in twenty-seven, or 81.8 per cent., out of the thirty-three cases studied. All but two cases, moreover, showed the presence of some degree of leukocytosis. In eight cases, or 24.2 per cent., there was a positive blood culture. Thirty-one patients were treated with serum. One case was discovered only postmortem; the other two patients were out of danger when the type of infection was determined.

The smallest amount of serum given to any one individual was 85 c.c.; the largest, 1,050 c.c., with recovery. The average amount of serum administered was 375.8 c.c.

The serum therapy of pneumonia in the case of white persons is followed by serum sickness in a large percentage of cases—probably around 80 per cent.—anywhere from the fifth or sixth day to the second or third week after the administration of the serum, usually about the tenth day.

It was noted during the summer that the occurrence of serum sickness was much less among the negroes, who had been treated with immune horse serum, than among the whites. The absence of serum sickness was even more striking among the Porto Ricans. Only four of the thirty-one men treated showed evidence of serum sickness, as urticaria, muscular and joint pains, headache or fever.

The results of the serum therapy were very satisfactory; only two patients died in this series of thirty-three. One patient died suddenly on the eighteenth day during convalescence, apparently from a pulmonary embolus. No necropsy was granted. The second developed an empyema, and subsequently a severe facial erysipelas with which he died a few days later, on the twentieth day of the disease. The therapeutic results are especially gratifying, as a majority of these men were in wretched physical condition. Sixteen, at least, were shown to be harboring the hookworm in the intestine. Eight of the thirty-three had a pneumococcus bacteremia, which may be taken in general as evidence of severe infection.

Of the complications, four patients developed empyema, and three recovered after thoracotomy and drainage. Four developed otitis media and one of these an acute infection of the mastoid cells which necessitated a radical operation. Several had skin abscesses, one a phlebitis, one a submaxillary adenitis, one acute catarrhal appendicitis, and one an epididymitis. Two had complicating facial erysipelas.

During the same period there were three other cases of Type I pneumococcus infection among the soldiers. One of the patients was white, and two were colored. They were treated with serum and recovered.

SUMMARY

Porto Ricans under favorable conditions are susceptible to lung infection by the Type I pneumococcus. The disease pursues a typical course, accompanied by a bacteremia in about the same proportion as among white persons.

Specific serum therapy seemed to influence the disease. The mortality of this series was 6 per cent.

The incidence of serum sickness following the administration of antipneumococcus immune horse serum was infrequent as compared with our usual experience among white persons.

END-RESULTS OF ARTERIAL RESTITUTION WITH DEVITALIZED TISSUE

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Jan. 22, 1908, the right common carotid artery of a young, adult, female dog was divided, and a segment of vena cava, preserved for sixty days in formaldehyd solution, was interposed and sutured to the ends of the artery. The implanted tissue was treated with ammonia and absolute alcohol, and was impregnated with petrolatum, just prior to the operation. Feb. 12, 1908, the artery at the site of the operation was exposed, and a direct examination revealed an active circulation through the segment.[1]

The animal was demonstrated before the St. Louis Medical Society, Feb. 29, 1908, at which time, as far as could be determined by palpation, pulsation in the common carotid arteries was the same on the two sides.

Clinical examination, from time to time, demonstrated like pulsations in the two common carotid arteries. On the right side, at the site of operation, a dense nodular structure could be felt on the course of the artery. The animal raised pups in 1909-1910, and whelped several times in immediately succeeding years, but failed to raise litters. She remained in excellent condition except after occasional fights with other dogs, until age led to a general physical decline. For about six months prior to death, the decline grew increasingly more marked, and for several weeks preceding death she showed great physical weakness, with loss of appetite; emaciation became correspondingly evident. Two days before death she was barely able to rise to her feet, and was unable to stand for more than a minute. An examination revealed the pulse in both common carotid arteries to be the same by palpation. The animal died suddenly, March 20, 1919, just after the attendant gave water. According to his statement, she fell over dead—there was no struggling.

An examination shortly after death revealed the two scars of the previous operations: the first, for the operation proper, Jan. 22, 1908, and the second, for exposing the structures for direct examination, Feb. 12, 1908.

There was an enlargement of the right common carotid artery about 3.5 cm. long and 2 cm. in diameter on the course of the artery near the root of the neck, several centimeters distal to the origin of the artery. Above and below, the artery appeared and felt normal. The enlargement was fibrous and vascularized on the surface, and to the touch was resistant, but springy and apparently hollow.

A connection through the mass between the two parts of the artery on each side was demonstrated by manipulation under liquid, and confirmed by section.

COMMENT

This experiment was undertaken in an attempt to obtain conclusive evidence as to whether devitalized tissue may serve adequately and indefinitely to transmit blood in vascular restitution. At that time, others

1. Guthrie, C. C.: Am. J. Physiol. **19**: 482 (Sept. 2) 1907; Interstate M. J. **15**: 25 (Feb. 29) 1908; Science **27**: 690 (March 20) 1908; ibid. **29**: 29 (Jan. 11) 1909; Structural Changes and Survival of Cells in Transplanted Blood Vessels, J. A. M. A. **50**: 1035 (March 28) 1908; Heart **2**: 115 (Nov.) 1910; Cleveland M. J. **11**: 317 (May) 1912; Blood Vessel Surgery and Its Applications, New York, Longmans, Green & Co., 1912, p. 93.

were advancing the view that implanted vascular tissues resumed active, vital functions, even when the tissues employed had been removed for considerable periods from the body, or when their source was of a species different from the host. Our results from implanting vascular segments of cat and rabbit into dog, namely, effecting a restoration of good mechanical function, notwithstanding profound degenerative changes, had led me to suspect strongly that mechanical function in itself was not evidence of tissue survival; and I had expressed the view that, to restore and maintain mechanical function, such an implanted segment need only temporarily restore mechanical continuity and serve as a scaffolding or bridge for the laying down of an ingrowth of tissue derived from the host. For this reason, the implanted tissue was subjected to treatment that would, beyond question, assure its complete devitalization. Others have abundantly confirmed the findings, the most recent work being that of Nageotte and Sencert.[2]

An interesting feature of the experiment reported is that it is the first of the kind, as well as the longest in respect to end-results.

It is planned to report the results in detail elsewhere in collaboration with Prof. Oskar Klotz, to whom my thanks are due for the necroscopic examination, for preparing and preserving the gross specimen, and for conducting the microscopic study of the tissues.

TREATMENT OF GUNSHOT WOUNDS OF THE ABDOMEN *

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In the treatment of gunshot wounds generally, the last five years have witnessed great change and great improvement. In the treatment of gunshot wounds of the chest and of joints the advance has been most striking and will greatly change the civil practice in these fields; but in abdominal surgery it cannot be said that any wonderful change or improvement has been made. Because of the great prevalence of shell wounds over those made by high velocity bullets, operation in these cases has been much more regularly resorted to than, for instance, at the end of the Boer War. During that war it was undoubtedly true that patients did recover after penetrating and perforating wounds of the abdomen; but I cannot say that I saw in nineteen months spent in advanced and base hospitals a single instance of this kind.

In a communication of this length it is impossible to go deeply into the literature of the subject or to give extensive tables of statistics, even if this were desirable, and I shall confine myself to personal experience and observation.

NEEDLESS ABDOMINAL EXPLORATION

One of the most important things in the treatment of gunshot wounds of the abdomen is the ability to estimate fairly accurately whether the missile has really penetrated the abdominal cavity, and if so what structures have probably been damaged. This may not at first thought appear to be of the prime importance that it is, for one may say it is safer to open the abdomen in any case and determine whether penetration has occurred and what viscera, if any, have been injured. But, taking a large number of cases, this is not true; for one would find himself doing an exploratory laparotomy many times when there was no penetration; when the injured viscus, such as the liver, were better undisturbed; when the injury was above and not below the diaphragm, and in many cases in which the patient had multiple wounds and the prolonged negative exploration only added to the risk of life.

If a man has, for instance, a compound fracture of the leg or thigh, and perhaps a number of wounds of less severity, one should be very sure that a wound which would seem to have involved the abdomen really entered it before subjecting the patient to a deliberate abdominal section and a prolonged search for injury of the viscera; the other wounds alone render this case a serious one, and their treatment must require considerable time and involve a prolonged anesthesia. I do not mean, of course, to say that the abdominal wounds are not the most serious, or that they do not demand first consideration; but I would suggest that here, as in civil practice, one has no right to subject a patient to a needless abdominal exploration, especially when care and the exercise of judgment may show that such an operation is unnecessary. Numerous instances illustrating these points must come to the minds of many, and a common observation has been that many wounds which would certainly seem to have involved the abdomen were only wounds of its wall, and that others which were small and seemed trivial at first sight did involve the abdominal viscera.

VARIOUS TYPES OF WOUNDS

A common type of wound of the wall which produced shock and abdominal rigidity was that caused by a shell fragment and characterized by a large ragged wound of entrance, probably by a larger one of exit, by extensive ecchymosis, by marked abdominal rigidity, and by costal breathing. In such cases the wound should be excised or débrided and the abdomen should not be opened deliberately at some point of election until penetration has been definitely determined. It is needless to say that probing should never be done. The probe, in fact, should be eliminated from the paraphernalia of the military surgeon. I have seen a number of small and apparently trivial wounds, of the loin and lumbar region particularly, in which either a careful examination or time would show that the missile had penetrated the abdomen. I recall seeing a young officer, being treated for gas poisoning of slight degree in a field hospital, who made very light of a small wound in the left loin; but examination made one suspicious of abdominal penetration, and a few hours later, when he had been transferred to an evacuation hospital and operated on, the suspicion became a certainty.

It can truly be said, then, that to lay down definite rules for action in these cases is difficult, and that experience and judgment, and above all a careful examination of each case, are of prime importance.

Many more lives are lost in this field by "not wasting time in trying to make a diagnosis" and operating at once than by wasting the time in study of the case. It is not so much a question of diagnosis as of determin-

2. Nageotte, J., and Sencert, L.: Compt. rend. Soc. de biol. 82: 45, 1919.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventieth Annual Session of the American Medical Association, Atlantic City, June, 1919.

ing whether or not the abdomen should be opened. In this connection there comes to mind that interesting group of combined chest and abdominal wounds—perforations of the diaphragm—in which the surgeon probably has the greatest difficulty in determining his action. It is surprising in how many cases of gunshot wound of the lower chest or those in which a missile lies in or on the diaphragm, the patient will present symptoms which would certainly suggest an abdominal penetration: particularly abdominal rigidity, sometimes later abdominal distention, and frequently hiccup. I can recall six such cases in one evacuation hospital last summer, in any one of which operation might have seemed justified, but in which all six patients recovered without operation.

Still another type of these combined chest and abdominal wounds was that in which the missile penetrates the abdominal wall, perforates the liver and diaphragm, and lodges in the thorax. If the injury is confined to the structures mentioned, and the missile, as disclosed by roentgenoscopy, is not large, no immediate operation should be performed; but the question always came up as to the possibility of injury of the colon or stomach. The probable course of the missile, as indicated by its point of entrance and its location, was of the greatest help in many of these cases. My own rule was not to operate unless there was present a pretty definite indication of injury of a hollow viscus. The wound of the liver and diaphragm alone, except when made by a large foreign body or accompanied by a sucking wound of the chest, was not considered as calling for an immediate operation. I have often regretted operating and suggesting operation in these cases, but I cannot recall a single case in which I regret not having operated or recommending such a course. The situation here can be summarized by saying that if one is fairly certain that the hollow viscera have escaped injury, no operation should be done.

What about hemorrhage? In cases of hemorrhage from the liver caused by gunshot wounds, a few patients are saved by operation, many are not benefited, and not a few are made worse. I believe that nature is more likely to stop bleeding from a gunshot wound passing through the liver than is the surgeon. In some of these cases the missile has injured the kidney as well as the liver and diaphragm, and here the hemorrhage can and should be controlled, or the kidney removed.

TECHNIC

In regard to the technic of abdominal operations I think there is little to be said, for the war has, I believe, brought about no important changes. Perhaps an exception to this statement can be made in regard to drainage. The rule of closing the abdomen without drainage became established by our allies early in the war, and I believe is a good rule. The war has certainly shown that drainage of any wound is a frequent cause of its infection, and the discontinuance of the abdominal drain represented the application of this general rule to abdominal cases. There are, however, many cases, especially of wounds involving the large intestine and bladder, in which it would have been foolish not to drain.

An observation which I made, after a few months' service in a British base hospital in France, was that although many men with gunshot wounds of the abdomen were admitted in good condition a week or ten days after operation, yet a number of them later developed an infection of the wound and it had to be laid wide open. This occurred so often that later in my own work at a British clearing station I followed the plan in every instance in which evacuation was necessary within ten days—and this was true in most cases—of closing all the layers of the abdominal wall excepting the skin and placing sutures through the skin which could be tied later, if no infection occurred. I learned from Brewer that he had reached the same conclusion and followed the same practice. These late infections, I believe, occurred from the skin, and they were also frequently seen after complete closure of the chest and knee-joint wounds. Of course, in the latter two situations it is much more difficult to close off the cavity thoroughly, without closure of the skin, than it is in the case of abdominal wounds. I am sure from my personal experience that the late closure of the skin prevented an infection in many cases. It is true that the late infection of the abdominal wound practically never gave rise to an infection of the peritoneal cavity, whereas such an infection in a chest wound or in a wound of the knee-joint almost invariably resulted in an infection of the underlying cavity. My impression is that when an abdominal drain is employed, it should be a loose gauze drain covered with rubber dam or rubber tissue. The hard, rigid, rubber tubing, or uncovered gauze drains are much more apt to give rise to dense adhesions, which may later produce obstruction or, by pressure, necrosis.

MORTALITY

The mortality in gunshot wounds of the abdomen was extremely high, and a large proportion of this mortality occurred on the field or before the patient reached an advanced operating center, and hemorrhage and shock were its two most potent causes. But the mortality in those cases in which the wounded did reach the operating center was also high, largely for the same reasons, but often because the patient suffered from multiple wounds, the repair of which meant prolonged anesthesia and increased shock. From what I have seen of the late results, I should say that the mortality was not so high as might be expected from late complications in the case of those who recovered from the primary effects of their wound and the operation.

A common observation was that the prisoners with abdominal wounds seemed to stand operation better than our own soldiers, and that the mortality among them was not so high. This, I believe, was due to the fact that they were not operated on with the promptness, I may say haste, that was exercised in the case of our own men. If this observation is correct, the inference is obvious: that it is a mistake to operate on gunshot wounds of the abdomen until the patient has recovered from the shock sufficiently to stand operation, unless the shock is due to hemorrhage. To determine whether the shock is due to hemorrhage was, in many instances, very difficult; but when it was not due to hemorrhage, much better operative results were obtained by waiting. All of the patients, of course, have lost a certain amount of blood; and the important question to decide is whether the bleeding is continuing. One cannot resort to exploratory laparotomy with the same impunity that he would in civil life, because in most instances the patient is suffering from more than one wound, and the operation, which is indicated, must of necessity occupy a much longer period of time and

necessitate the employment of a much larger quantity of the anesthetic agent, two factors which largely increase the immediate operative mortality.

ABSTRACT OF DISCUSSION

DR. EDWARD W. MEREDITH, Pittsburgh: In the case of patients arriving with abdominal wounds which seemed to have penetrated the peritoneum we were able, on account of the absence of rigidity, vomiting and because of the generally good condition of the patient, to say that this patient did not have a penetrating wound of the abdominal cavity. This gave us an opportunity to operate on the wounded men most in need of immediate attention, and to leave the treatment of other patients for a more convenient time. The average time of arrival of patients after injury was twenty hours. In cases in which a hollow viscus was penetrated the question was that of diagnosing peritonitis. We did have abdominal rigidity, some distention and some rise in pulse rate, in addition to the rise that might come from hemorrhage, to aid us in diagnosis. The surgical proposition, therefore, was that of treatment of peritonitis. In none of these cases, except a case of ruptured spleen, was there any question of serious hemorrhage. Four patients with wounds of the chest and abdomen were operated on; two patients had a ruptured spleen; one patient had a ruptured kidney; the fourth patient showed no visceral lesions. The two patients with ruptured spleen died from preoperative and postoperative hemorrhage. All patients were placed in the shock ward, both for observation and resuscitation. After a long ambulance ride, with more or less exposure to cold, with pain and loss of fluids they arrived in a much shocked condition and with depressed vitality. After two or three hours rest in a warm bed there was usually considerable improvement, if anything could be done. Perhaps we used drainage more than Dr. Gibbon did. We found it necessary to drain in 30 per cent. of the cases. The abdominal wall was sutured, with the exception of the skin—following the general rule laid down in the A. E. F. not to suture the skin. We did, however, suture the remaining layers of the abdominal wall. The chest cases in which it was possible that there might be combined abdominal injury were treated conservatively as were all chest cases in our hospital. In wounds of the lower chest wall, in which abdominal distention might be expected, we followed the same rule of depending on rigidity of the abdomen to determine whether an operation should be done. If we could satisfy ourselves that no abdominal hollow viscus had been injured we followed the conservative plan as in the straight chest cases. The difference between military and civilian surgery in cases of wounds of the abdomen is not great. We have nothing special to offer in improved technic in the operation itself. We were handicapped, of course, by the lateness of the patient's arrival. In civilian life this interval would certainly be less than twenty hours. We were handicapped also at times by the rush of patients, and by questioning whether it was advisable to operate in some of the more serious abdominal cases or to operate first on patients who were more lightly injured that they might be restored more quickly. We did not refuse any patient an operation because of the seriousness of his condition. The larger percentage of patients arriving in our hospital reached there in fair condition. Outside of the difference in time of seeing the patient after injury there is little difference between military and civilian surgery.

Is Your Community Fit?—Are your schools provided with medical supervision to control the spread of communicable diseases among the children and to limit the number of sources of contagious diseases which often spread rapidly when carried to susceptible persons? Do your children have the advantage of regular physical examination by a physician? Is there a clinic for the treatment of all the physical defects discovered as a result of this examination? The after-war development of your community will depend largely on the physical fitness of your present school population.—*Pub. Health Rep.*, April 25, 1919.

SURVEY OF THE EPIDEMIC OF INFLUENZA IN THE AMERICAN EXPEDITIONARY FORCES *

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NEW YORK

The origin of the epidemic of influenza and its invasion of Europe is still obscure; but it is certain that influenza existed in epidemic form in Spain, France and possibly England, early in 1918, and it may even have been present in endemic form during the previous year. By May, 1918, there was in Spain a widespread epidemic which received much publicity. In April or May there were local outbreaks of the disease, according to the report of the British commission, in the first and second British armies, and by the late spring influenza was present in epidemic form, not only in Spain and in France, affecting both the British and the American armies, but also in Italy, Belgium, Austria and Germany.

Until the complete official reports of the incidence of influenza in the American Expeditionary Forces are made available and the statistics of the epidemic published, it is impossible to give figures or similar accurate data which bear on the epidemiology of this disease among our own troops in France. A paper by Dr. Ward J. MacNeal,[1] assistant to the director of laboratories and infectious disease, American Expeditionary Forces, which recently appeared, is an official report on the epidemic, and contains considerable data of interest. Dr. MacNeal kindly allowed me to see the manuscript and to quote from it. Much of what I have to say, nevertheless, must be based on personal observations that are of necessity fragmentary and limited.

As one reviews the history of the epidemic in France, it may be divided into three fairly definite outbreaks with an intermediate and interesting phase bridging the gap between the second and third outbreaks.

The first outbreak appeared in April and May, 1918. It was comparatively mild and spoken of as "three day fever."

The second outbreak came in September and October, 1918, and formed a part of the terrible pandemic.

The third definite outbreak, according to recent reports, was much less serious, and occurred in January and February, 1919.

The fourth or intermediate phase was represented by scattered cases of influenza and great numbers of respiratory infections, either unaccompanied by pneumonia or associated with a pneumonia of the true lobar type. This phase followed the second great outbreak, and continued during the autumn and winter of 1918-1919.

THE FIRST OUTBREAK

In the first outbreak the earliest recorded epidemic among the American Expeditionary Forces appeared, according to MacNeal, about April 1, 1918, at Rest Camp No. 4 in Base Section 2, near Bordeaux. It reached its height, April 22, and ceased, May 5. In May, 1918, a second outbreak of influenza was reported from the Quartier de Beaumont, Tours, which lasted from May 1 to May 24, and affected 117 persons.

* Read before the Section on Practice of Medicine at the Seventieth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1919.

1. MacNeal, W. J.: The Influenza Epidemic of 1918 in the American Expeditionary Forces in France and England, Arch. Int. Med. 23:657 (June) 1919.

During this month another epidemic occurred at Chaumont, and from this time until July, more or less extensive epidemics appeared throughout the entire American Expeditionary Forces. The disease was likewise prevalent at this time among the French population and in parts of the British army. It is stated by the British commission[2] that in the first British army, between May 18 and July 2, 36,473 cases of influenza were admitted to casualty clearing stations. It is obvious, therefore, that a widespread epidemic of influenza prevailed throughout France in the spring of 1918, reaching its height in May and June, and subsiding during July and August.

Influenza in this first outbreak was a comparatively mild disease. It was notable on account of the rapidity with which it spread through any organization, on account of the high morbidity rate, the short duration —from two to four days—and the rarity of complications.

The onset was sudden with fever, headache, prostration, pain in the eyeballs, pain in the back, soreness of the muscles, occasional abdominal pain, and rarely vomiting and diarrhea. Epistaxis was common. Occasionally a dryness of the throat with a harsh cough was described. In many cases there were conjunctivitis, slight suffusion of the face and some reddening of the fauces. Muscular tenderness and, more rarely, abdominal tenderness, were present. The fever lasted from two to four days, and convalescence was rapid and almost always uneventful. At this time serious involvement of the respiratory tract was so uncpmmon that this feature attracted little attention. Only the milder manifestations already mentioned were observed in most localities, though in a few places pulmonary involvement was referred to. In the first British army, it was estimated that in 1 per cent. of all cases coming to the casualty clearing stations, bronchopneumonia developed, from which 10 to 15 per cent. of the patients died. In one epidemic in the Eleventh Engineers, A. E. F., reported by Bradbury,[3] among 613 cases of influenza there were ten of severe laryngitis and four instances of bronchopneumonia, from which one of the patients died. It is clear, therefore, that while the first outbreak was generally of a mild character, the upper respiratory tract was not infrequently affected, and occasionally pneumonia recurred as a complication.

THE SECOND OUTBREAK

The second and serious outbreak started during the latter part of August and early in September. In the early epidemics at this time the involvement of the respiratory tract first became alarming. Even by Aug. 18, 1918, in an epidemic at an artillery camp at Valdahom that has been carefully studied by Major Snow and Captain Alan M. Chesney, the disease in most of the 203 patients that were in the hospital presented symptoms of involvement of the upper respiratory tract. Many patients presented signs of the acute emphysema to which Torry and Grosh[4] have called particular attention in the cases in this country, while the development of pneumonia was not uncommon. Later with the assignment of fresh troops to this camp, the epidemics became much more serious in nature, owing to the frequency of pneumonia. A little later and during the early part of September, a similar but much larger epidemic took place in an artillery camp near Bordeaux, and though the cases of pneumonia were not very numerous, the mortality among these patients was high.

From the latter part of September until the last of October, the outbreak was at its height. This was approximately the same time that the influenza raged in America. The disease seems to have been the same in the two continents. If it were possible it would be of the greatest interest to compare the incidence of the disease and the morbidiy and mortality rate in the different units and organizations in the American Expeditionary Forces with the figures that have been collected from the camps in this country, for in America the troops were under fairly uniform conditions, whereas in France these varied tremendously. It is fair to say, however, that the disease was present throughout France in epidemic form from the base ports to the fighting front. It prevailed particularly, however, first, among the troops at the base ports where during a part of the epidemic transports laden with infected troops were being landed; secondly, in those organizations that contained the largest numbers of replacement troops; and thirdly, in organizations that were being moved on troop trains, where the men were necessarily closely crowded.[5] The effect which exposure and cold had on the incidence of the disease and its share in determining the prevalence of pneumonia as a complication is not perfectly clear. Troops which were at the front were affected, but it seems highly probable that some organizations were much more severely affected than others which operated under very similar conditions. A study of carefully collected figures and an analysis of the exact conditions would be necessary before one could make any statement regarding this matter. It did seem clear, however, that crowding of influenza patients and their transportation on trains increased the incidence of pneumonia. It will undoubtedly be extremely difficult to determine the morbidity rate in the American Expeditionary Forces, but there is little reason to suppose that it will differ materially from the figures and variations that occurred in this country. An epidemic in one organization which was well separated from other American divisions affected about 20 per cent. of the men. It was further estimated that there were upwards of 1,000 cases of pneumonia, of which 30 per cent. were fatal. This is not very high as compared with the tables which Soper[6] gives for the camps in this country.

The symptomatology, the clinical course, the pathology and the bacteriology of the disease seem to have been in the main the same in France as they were in this country, and it is, therefore, unnecessary to describe the clinical course which is familiar. At many hospitals that interesting complication, generalized subcutaneous emphysema, which has also been reported from camps in this country, was observed. The mortality in this group was high.

There is a second group of cases to which attention must be drawn. In these meningococci were obtained in culture from the sputum, the blood and in enormous quantities from the pneumonic lungs at necropsy; and it seems highly probable that the meningococcus played some part in the epidemic as a secondary invader and

2. A Report on the Influenza Epidemic in the British Armies in France, 1918, by the Influenza Committee of the Advisory Board to the D. G. M. S., France, Brit. M. J. 2: 505 (Nov. 9) 1918.
3. Bradbury, S.: Am. J. M. Sc. 156: 737 (Nov.) 1918.
4. Torrey, R. G., and Grosh, L. C.: Am. J. M. Sc. 157: 170 (Feb.) 1919.
5. Epidemic Influenza Among American Soldiers Abroad, Pub. Health Rep. 33: 2035 (Nov. 22) 1918.
6. Soper, G. A.: The Pandemic in the Army Camps, J. A. M. A. 71: 1899 (Dec. 7) 1918.

must be classed as such with the various types of pneumococcus, *Streptococcus hemolyticus* and *Staphylococcus aureus*. The etiology of the disease and, therefore, the position of the influenza bacillus in relation to it, are outside the present discussion. There is one other group of cases which was common in the American Expeditionary Forces, but to which reference has rarely been made. These are the cases of influenzal pneumonia running a prolonged or subacute course. In many of these patients, signs suggestive of lobular pneumonia with extensive bronchitis persisted for weeks and were frequently confused with tuberculosis. It is highly probable that some of these patients had developed bronchiectasis.

OTHER OUTBREAKS

The second and terrible outbreak subsided during the early part of November. The third outbreak of influenza is reported as occurring in January and February of 1919; but since very few data are available concerning this epidemic, I shall not discuss it here.

Between the second and third true outbreaks there occurred what I have termed the fourth or intermediate phase of this epidemic; and though the infections during this period must be considered as a sequel to, rather than a part of, the influenza epidemic, they nevertheless have an important bearing.

With the subsidence in November of the great outbreak, respiratory infections of all types became extremely common, and though it was difficult to differentiate many of these infections from influenza, the large majority did not conform to the clinical picture which had previously been familiar. Laryngitis, tracheitis and bronchitis were extremely common. As a rule, the infections ran a fairly prolonged course with slight initial fever of a day or two. True lobar pneumonia was not unusual. The lobular pneumonias were less common than before. Many of these patients had previously had an attack of typical influenza. There was a leukocytosis in some of the patients observed. Although it is difficult to come to any definite conclusion as to the position which this intermediate phase bears to the general epidemic, it seems highly probable that respiratory infections at this time were not all instances of influenza, but were usually due to the bacteria which had been secondary invaders in the original epidemic. As an explanation of this phase of the epidemic, therefore, one might suggest that the bacteria which as secondary invaders had been widely disseminated and had repeatedly passed through numerous susceptible hosts during the influenza epidemic, had acquired increased virulence and certainly wide distribution and were responsible in themselves for the great prevalence of more or less serious respiratory infections during the few months following the second serious outbreak of influenza.

SUMMARY

It may be said that the influenza epidemic in the American Expeditionary Forces was characterized by three definite outbreaks or peaks: the first between April and July, 1918; the second in September and October, and the third in February and March, 1919. Between the second and third peaks there was an intermediate phase.

The first outbreak was comparatively mild, and at this time involvement of the respiratory tract was unusual and attracted little attention. In the second outbreak, infection of the respiratory tract with the occurrence of lobular pneumonia became rapidly the predominant feature and was responsible for the high mortality.

These respiratory infections were often associated with the influenza bacillus, but were largely dependent on a secondary invasion of pneumococci, streptococci or, in some instances, even of meningococci.

Following the second peak, there came the intermediate phase during which time the variety of influenza observed in the early outbreaks was rarely seen but respiratory infections of all sorts were extremely prevalent, and one gained the impression that the organisms acting as secondary invaders during the epidemic proper were the primary causes of the bronchitis and pneumonia which was widespread at this time.

The character of the disease occurring in the second peak was the same as that which spread at the same time throughout the United States.

The influenza epidemic affected troops in all parts of France, but prevailed especially at the base ports, in those organizations containing the greatest number of fresh replacements, and in organizations in which the men were of necessity densely crowded together and subjected to excessive fatigue and exposure.

ABSTRACT OF DISCUSSION

DR. ALBERT E. ROUSSEL, Philadelphia: I would like to ask Dr. Longcope what the mortality is in the uncomplicated influenza cases and by that I mean that bronchitis can be accepted in most of these cases as one of the necessary accompaniments of the respiratory tract, what the mortality in these uncomplicated cases is. In the experience of the two epidemics of influenza I think that the mortality of the influenza even of the more virulent type is as yet relatively small—not more than possibly 2, 3 or 4 per cent., that the greater mortality is due to complications often unrecognized so that I do not see why an attempt should not be made to differentiate from influenza proper and its complications. We do know that the pneumonic complications were of a particularly high rate of mortality. Another particular point of interest, I would like to know the proportion of bronchopneumonias to lobar pneumonias. Out of 186 cases of pneumonias in my service there were only seventeen cases of lobar pneumonia. And yet another question, I would like to know the number of cases of kidney involvement of various degrees. No less than 8 per cent. of these cases showed kidney involvement, probably 4 per cent. an acute nephritis.

DR. EDWIN R. LE COUNT, Chicago: It seems to me that some of the members might be interested to know that the first outbreak of influenza was in April, 1918. In Chicago the first postmortems were made by me in the first week of April, 1918. I think there may have been other cases in this country. We did not know at that time what we had. The lungs were full of hemorrhages. It was a reasonable thing to diagnose them as poliomyelitis and meningitis. I sent for my colleagues, Dr. Hektoen and Dr. Davis, to look over it as a new disease. Dr. Davis studied it bacteriologically. We sent everything worth while to a chemist and made histologic examinations, but it was not until the fall that we knew what we had, when we had cases duplicated.

Child Welfare.—Organized recreation is a new idea in comparison with the idea of health. The child of elementary school age should spend at least two or three hours a day in play. Thirty minutes a day is the minimum of time that should be spent in play during the school day. In Camp Sherman it was discovered that 75 per cent. of the men did not know how to play. Two hours a day was spent in organized play as a part of their training.—*School Life* 2:2 (May 16), 1919.

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SATURDAY, JULY 19, 1919

IS EPINEPHRIN INDISPENSABLE TO LIFE?

Epinephrin is produced by the suprarenal glands. As these are generally regarded as indispensable for life, and since epinephrin is a potent physiologic product which can profoundly affect certain muscular structures and the circulation, the discharge of this substance into the blood has come to be regarded as the most prominent feature of suprarenal function. There is no doubt that the suprarenals can at times and under appropriate nervous stimulation secrete unusual amounts of epinephrin into the circulation. Some clinical observers have therefore asserted that certain features of nephritis and arteriosclerosis are due to a sort of suprarenalinemia. Furthermore, epinephrin has been held responsible for some of the physiologic manifestations called forth by fright or other extreme emotions. A recent reviewer of the present status of these contentions that epinephrin is secreted into the blood in supernormal amounts in such emergencies states that the belief has arisen partly from the similarity between the general behavior of an animal following the intravenous injection of epinephrin and during states of extreme excitement. Dilatation of the pupils, bristling of the hair, salivation, rise in arterial blood pressure, inhibition of the intestinal movements, protrusion of the eyeballs, are all symptoms of fear just as they are of epinephrin injection.[1]

The assumption that the physiologic reaction to fear and other emotional states is dependent on hypersecretion of epinephrin into the blood—an assertion especially supported by Cannon—has been rendered of doubtful validity, if not actually untenable, by the extensive researches of Stewart and Rogoff and their collaborators at the Western Reserve University School of Medicine. They report that animals in which both suprarenal glands are entirely removed from the influence of the nervous system behave like normal animals when frightened. Therefore, epinephrin appears to have little if any contributory influence in the usual course of events associated with emotional states.

Doubt has already been expressed that such functions as the tone of the muscles and blood vessels are particularly dependent, as some have argued, on a discharge of epinephrin into the circulation. It has been a tempting hypothesis to assume that changes in blood pressure are brought about by a mechanism in which the secretion of a pressor substance like epinephrin plays a dominant part. But the investigations of Stewart and Rogoff[2] seem clearly to negate this. They have demonstrated on a number of animal species that it is possible to live indefinitely in good health after excision of one suprarenal and section of the nerve of the other, an operation which either abolishes the output of epinephrin from that suprarenal or reduces it to a small fraction of the normal. The observations have been so numerous and so well controlled that they preclude the assumption of the presence of accessory suprarenals or of any similar factor to account for the results. For the present, physiology may rest with the belief that the liberation of epinephrin from the suprarenals is not indispensable for life and health.

1. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1918, p. 745.

2. Stewart, G. N., and Rogoff, J. M.: J. Pharmacol. & Exper. Therap. **10**: 1, 1917; Further Observations Showing That Epinephrin from the Adrenals Is Not Indispensable, Am. J. Physiol. **48**: 397 (May) 1919.

3. Cabot, R. C.: A Layman's Handbook of Medicine, Boston, Houghton, Mifflin Company, 1916, p. 113.

THE CLOTTING OF MILK IN THE STOMACH

It is singularly unfortunate that there are such marked differences of opinion regarding a food as nutritious and unique as is milk. The physician who advises its use is continually met with statements as to the intolerance of individual patients toward it. Usually their idiosyncrasy is described as an inability to digest milk; more rarely there are reports of apparent hypersensitiveness to this food suggesting the familiar anaphylactic responses to other dietary articles. By some who are responsible for feeding the sick, the use of milk is studiously avoided whenever the patient expresses an objection to it. Others, on the other hand, follow the dictum expressed by Richard Cabot:

> Any one can take milk. If a person tells me, "I cannot take milk," I always say, "You can if you will take it in a certain way." It is a question usually of flavoring it aright or of taking it like soup, with a spoon, with a bite of some carbohydrate substance, cracker or bread, between the sips. I do not think everybody must take milk, but I think everybody can.[3]

The digestion of milk in the alimentary tract is unique, in contrast with other foods, in that it exhibits the well-known phenomenon of clotting. The clots produced in the stomach vary enormously in size and texture. Sometimes they remain finely flocculent; otherwise they may shrink or coalesce into a hard and leathery mass. It would not be difficult to quote "authorities" for all manner of views respecting the relative digestibility of the precipitated casein in the different forms which it may take in the stomach. Even more varied are the views regarding the conditions or treatment of milk responsible for its clotting

in the dense or in the finely flocculent state, respectively. It is natural that the hypothesis of the greater digestibility of a finer suspension of protein should have proved more popular on general principles, yet this is by no means the view held exclusively. To attain a desired type of flocculence, various procedures have been advised. Dilution with water, with lime water, or with cereal concoctions finds advocates. The suggestion to boil the milk; to reduce or augment the fat content, as the case may be; to employ preliminary chemical or enzymatic treatment—these and other proposals have been made, from time to time. It is doubtless true that a dozen claims, mostly conflicting, could be discovered in the literature of advices regarding the ideal mode of preparing milk as a food.

A group of investigators[4] at the Jefferson Medical College have discarded the test tube and beaker, and substituted the human stomach in the study of how milk coagulates under physiologic conditions. The cooperation of a normal man who could regurgitate stomach contents at will supplied an unusual facility for such an investigation. The results observed on him are contradictory to much that is traditional and taught. They tell us, for example, that milk drunk rapidly left the stomach sooner and produced a smaller curd mass than milk drunk slowly or "sipped." This is quite as revolutionary as the now admitted assertion that water drunk at meal time is not an unmixed evil, or that the "fletcherizing" of food fails to accomplish any marvels in digestion. Again, it was learned that raw whole cow's milk forms a large, hard curd, whereas boiled milk curds in a much finer and softer form; that the presence of much cream (milk fat) in the milk insures the formation of particularly soft curds which are slow to leave the stomach; that skimmed milk yields a particularly hard curd, owing to the absence of fat; that pasteurized milk shows smaller curds than the raw whole milk but larger than the boiled whole milk, and that cold milk coagulates more slowly than warm milk.

Some of these findings have been reported before.[5] It would be premature to announce them as the last word on the clotting of milk in the human stomach, or to make them the sole guide to the ways of using milk as food. Thus, the question of the effects of heating milk on some of its physiologic properties, such as the antiscorbutic potency, cannot be ignored in this connection; nor do the texture and form of the curd necessarily parallel any scheme of digestibility. Perhaps this recital will have served a useful purpose if it directs attention to the inadvisability of offhand pronouncements on subjects still so incompletely investigated and imperfectly understood as are the conditions modifying the alimentary digestion of milk.

4. Bergeim, O.; Evvard, J. M.; Rehfuss, M. E., and Hawk, P. B.: The Gastric Response to Foods, II, A Fractional Study of the Coagulation of Milk in the Human Stomach, Am. J. Physiol. 48: 411 (May) 1919.

5. Brennemann, Joseph: Boiled Versus Raw Milk, J. A. M. A. 60: 575 (Feb. 22) 1913; Arch. Pediat. 34: 81, 1917.

IMPRESSIONS VERSUS FACTS IN THE TREATMENT OF PNEUMONIA

The value of any method of treatment, whether developed empirically or by a long and laborious course of scientific reasoning and experiment, must rest finally on the outcome of its application to clinical medicine. Furthermore, the analysis of clinical results, either statistical or derived from observations of symptomatology, must also be scientifically controlled. On passing from the laboratory to the clinic, the obligation of scientific accuracy is increased rather than diminished, and with the decrease in control over the individual elements of the experiment, the need for caution in interpretation of results increases proportionately. If the case mortality of a given disease were regularly 100 per cent., and if by the use of a remedy the mortality were regularly reduced to 50 per cent., the number of cases necessary to establish the clinical value of the remedy would be many times smaller than if the untreated case mortality were, say, 75 per cent. And if in the untreated disease it were known that the mortality varied within wide limits, the number of observations necessary to prove the value of a remedy by the statistical method would be still further greatly increased.

Lobar pneumonia presents an unrivaled variability in clinical course, duration and mortality in different epidemics from season to season and in the relation of case mortality to age incidence. The long list of remedies, each with its extremely low case mortality, which have claimed temporary favor and later been discarded, testifies to the difficulty of safe scientific deduction in a disease in which there are so many naturally varying and often imponderable factors.

The difficulties of forming a clinical judgment are in no wise decreased when it is proposed to substitute a biologic product for a drug. The known presence of antibodies in a serum, or the demonstrated protective power of a serum for test animals, may serve to raise one's hopes of success, but do not justify any departure from the most rigorous control of data derived from a study of clinical results. McClellan[1] has recently presented the results in 322 cases of lobar pneumonia in soldiers at Camp Grant in which treatment with immunized chicken serum was given. He concludes that "the low mortality . . . together with the favorable modification of clinical symptoms by the serum . . . would seem to indicate the extension of its use in pneumococcus lobar pneumonia."

Without debating the question as to whether antibodies said to be demonstrable in the serum might reasonably be expected to exercise an appreciable specific effect on the human body when injected in doses of 2.5 c.c. once or twice a day, or whether the

1. McClellan, J. H.: Antipneumococcus Serum (Kyes) in the Treatment of Lobar Pneumonia, J. A. M. A. 72: 1884 (June 28) 1919.

chill and other phenomena observed following its intravenous injection may not have been of a nonspecific nature — similar to those observed when other foreign proteins are injected intravenously as has been already shown in pneumonia — it seems desirable to examine critically the deductions of the author to determine how far the carefully made observations justify his conclusions.

The total case mortality was 7.7. Unfortunately the case mortality of untreated control cases, which is obviously required for a scientific statistical study, is lacking. While the mortality is low compared to the general civilian mortality for pneumonia, several factors besides specific treatment undoubtedly entered into the favorable result. The age incidence (from 21 to 30) and the good general health of a selected class of soldiers should yield a lower mortality than is encountered in civilian population. The case percentage of deaths from pneumonia in the registration area, ages 5 to 20 in the years 1911 to 1916, varied between 5.1 and 5.7, and for ages 20 to 40 from 15.5 to 16.9. For ages 20 to 30 the mortality would be somewhere between these, probably above rather than below 10. Complete figures of mortality from lobar pneumonia for 1918 in the army are not yet available, but sufficient data are at hand to show that the mortalities in the several camps varied and that the total case mortality from lobar pneumonia, not associated with influenza or measles, was probably less than in corresponding civilian groups. Thus in published reports the case mortality varied greatly, so that a group of cases in one camp might show a mortality of 6 per cent., and in another a mortality three times as large. The case mortality of pneumococcus pneumonia for the period September, 1917, to March, 1918, will probably average about 10 per cent. Type I pneumococcus infections may perhaps be expected to give a slightly lower mortality. The mortality of Type I cases in which McClellan applied his treatment was 9.3 per cent. Some camps of the North showed lower mortality than did those of the South. The environment of soldiers previous to entry into the army, whether urban or rural, their race and physical condition, the coincidence of other epidemic disease and the detailed medical care and symptomatic treatment which they received while in hospital all no doubt had some influence on the mortality of pneumonia. When these factors are considered in relation to cases in which McClellan gave his treatment at Camp Grant, the Camp Grant cases might be expected to yield a mortality even lower than the general army average, quite independently of specific treatment.

As a record of achievement in obtaining a low death rate in a serious disease, the report of McClellan deserves much credit; but in the absence of data relative to control cases treated in the same camp, its value as a scientific demonstration of the effectiveness of a remedy is limited. Continued study and experimentation offer the only hope of progress in the cure of disease, and any rational attempt at therapy deserves a thorough and sympathetic hearing; but in the final trials, before a method is given the clinical stamp of approval, the evidence in its favor should be most carefully weighed and controlled. The joint responsibility of an investigator and his clinical colleagues is large and requires circumspection lest the remedy that appears promising may pass prematurely from their control into the hands of those less interested in science than in financial gain, with the resultant exploitation of the profession and the public.

EXPERIMENTAL ALTERATIONS OF BRAIN BULK

The physical conditions that determine the character of the circulation in the brain have long been regarded to be considerably different from those that obtain in other parts of the body. In most vascular areas, vasomotor changes in the blood vessels are followed by corresponding alterations in the volume of the parts affected. A limb swells or shrinks, respectively, as its blood vessels become dilated or constricted. The brain, on the other hand, is enclosed in a rigid cranium which cannot alter its size in such elastic fashion. Since the blood vessels of this organ are currently believed to project into "a rigid case filled with incompressible material," it is obvious that they cannot, on this hypothesis, contract or dilate without some increase or decrease in the volume of the contents of the cranial cavity. Consequently, a recent writer[1] reflects the trend of present-day opinion when he states that the total volume of blood in the brain must be constant at all times. This is the doctrine formulated by Monro[2] more than a century ago, elaborated by Kellie[3] in 1824, and accepted by the eminent surgeon Abercrombie.[4] As a logical consequence, alteration of blood supply to the brain would depend on the change in velocity with which the circulating medium traverses that organ. As Macleod describes the situation, when more blood is required in the brain to compensate for the increased metabolism which we must assume accompanies heightened mental activity, it is not supplied as in other parts of the body by an increase in the capacity of the vessels as compared with those of other vascular areas, but by an acceleration of the circulation through vessels whose caliber remains unaltered. The main factors determining the velocity of bloodflow through the brain must, therefore, be dependent on changes occurring elsewhere in the vascular system.

1. Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1918.
2. Monro: Observations on the Structure and Function of the Nervous System, Edinburgh, 1783.
3. Kellie: On Death from Cold and Congestion of the Brain, Edinburgh, 1824.
4. Abercrombie, John: Pathological and Practical Researches on Diseases of the Brain, Edinburgh, 1828.

Quite recently other possibilities have been indicated through the researches of Weed and McKibben[5] of the Army neurosurgical laboratory at the Johns Hopkins Medical School. Their researches suggest that the brain should no longer be regarded as incompressible and of fixed volume in accord with the earlier doctrines, but rather as capable of some variation in size. Weed and McKibben have reported the production of alterations in brain bulk independent of changes in volume of the blood in the vascular bed. By producing marked alterations in the osmotic pressure of the blood —through intravascular injection of either hypertonic or hypotonic solutions—changes in the pressure of the cerebrospinal fluid can readily be brought about. But in addition to this, there are striking changes in the size of the brain itself. That these experimental variations are dependent essentially on the factor of osmotic pressure changes of the blood is attested by the fact that no alteration in the volume of the brain follows relatively large doses of Ringer's solution but occurs promptly on intravenous injection of far smaller amounts of distilled water or concentrated salines. Just how this change in osmotic value of the blood affects the brain tissue and alters its volume, the discoverers add, can only be speculated on at the present time. For the purpose of future consideration, we must, therefore, now assume that "the cranial cavity is relatively fixed in volume and is completely filled by brain, cerebrospinal fluid and blood; variations in any one of the three elements may occur, compensation being afforded by alteration in the volume of one or both of the remaining elements."

"CATAPHYLAXIS" AND GAS GANGRENE

The unexpected prominence of gas gangrene as an incident of war wounds has stimulated new investigations in this field of pathology. It is known that the peculiar, abnormal manifestations fail to appear in a large number of cases definitely demonstrated to be infected with the organisms chiefly responsible for gas gangrene, namely, *Bacillus welchii, B. oedematiens* and *Vibrion septique*. According to Bulloch and Cramer,[6] the explanation generally given for the small incidence of gas gangrene in wounds infected with these bacteria is found in the special conditions supposed to obtain in war wounds. The interference with the circulation, the presence of large masses of dead and lacerated muscle, and the presence of dirt and other foreign substances, have all been suggested as factors in making the wounds an exceptionally favorable nidus for the growth of the micro-organisms concerned.

Certain striking experimental facts must be considered in attempting to explain the problem here concerned. When the bacteria of gas gangrene or of tetanus are completely free from their toxins by washing or other methods, they do not produce their specific disease when injected into mice or guinea-pigs. The apparent reason is that the animals dispose of the bacteria partly by lysis and partly by phagocytosis. This defensive mechanism is reputed to be so effective that the bacteria become nonpathogenic when they are injected by themselves. If, however, a small quantity of toxin—even less than is fatal by itself—is introduced along with the micro-organisms, these defensive devices are paralyzed and untoward results follow. In other words, the protective mechanism may be so effective normally that the formation of a toxin in a concentration sufficient to interfere with the normal defensive activities is prevented.

Bulloch and Cramer[6] have observed that if a small dose of a soluble ionizable calcium salt is injected together with the bacteria or their spores, the specific disease is elicited in a very virulent form. The chlorids of sodium, potassium, ammonium, strontium and magnesium, when injected together with *B. welchii*, are not capable of producing gas gangrene. A direct contact between the bacteria and the calcium salt is not essential. The phenomenon will occur if the bacterial suspension and the calcium salt are injected at different times into the same site, or into different sites at the same time or at different times. The English pathologists conclude that the effect of such injections of calcium salts is to produce local changes leading to local breakdown of the normal defensive mechanism against the bacteria of gas gangrene and tetanus. To this phenomenon the name "cataphylaxis" or "defense rupture" has been assigned.

If "cataphylaxis" is responsible for the unfavorable outcome of infection with the bacillus of gas gangrene, one naturally inquires as to what destroys the body's defenses in the case of those war wounds that take an unfavorable turn. Obviously, salts of calcium cannot always be held responsible. Bulloch and Cramer have found that, of the various foreign bodies tested by them, emulsions of earth were the only ones which frequently, although not invariably, elicited gas gangrene when injected together with the detoxicated bacteria of gas gangrene or their spores. The result is due to a chemical rather than a mechanical factor, since filtered watery extracts were also effective. The damaging potency differs in samples obtained from different localities. Hence the chemical contamination of wounds, as well as their bacterial invaders, may play a part in determining the appearance of gas gangrene. Hence, further, we may understand why it varied with the locality in which the wounds had been received, and was relatively infrequent in certain localities, even though the wounds were infected with

5. Weed, L. H., and McKibben, P. S.: Experimental Alteration of Brain Bulk, Am. J. Physiol. 48: 531 (May) 1919; Pressure Changes in the Cerebro-Spinal Fluid Following Intravenous Injection of Solutions of Various Concentrations, ibid., p. 512.

6. Bulloch, W. E., and Cramer, W.: On a New Factor in the Mechanism of Bacterial Infection, Proc. Roy. Soc. London B. 90: 513 (May 15) 1919.

the bacteria of gas gangrene. The hypothesis of the special significance of wound contamination with earth will not explain every case of tetanus and gas gangrene. It adds a new chemical factor for consideration in the mechanism of bacterial infection.

Current Comment

DR. ABRAHAM JACOBI

With Dr. Jacobi's passing, medicine loses one of its foremost figures. Dr. Jacobi enjoyed an unusually long and eventful career, marked by numerous honors at the hands of civic and professional societies. In his capacity as teacher and writer for six decades, he was known to a vast number of physicians throughout the country. His conversation and writings were full of "quaint wit, varied learning and true wisdom." His interest in medical progress and medical knowledge never wavered. Justly held in touching reverence by American physicians, Abraham Jacobi, the Nestor of American pediatrics, lived a full life as beloved physician, noted pediatrician, public spirited citizen, and honored leader.

ERYTHEMA NODOSUM AND OTHER SKIN LESIONS IN TUBERCULOSIS

Tuberculids or paratuberculoses are sometimes defined as a group of skin affections, associated with tuberculosis of other structures of the body, but which do not themselves show the anatomic picture of tuberculosis, to which they consequently seem to have only an indirect relation. Some of the well recognized members of this group are acnitis, lichen scrofulosorum, and acne scrofulosorum. Dermatologists are not agreed as to the causative factor of these lesions, some believing that they are due to "tuberculous toxins," while others hold that the lesions are due to actual reactions to hematogenously distributed tubercle bacilli. Recently Stokes[1] of the Mayo Clinic has discussed the frequent association of erythema nodosum, purpura, and erythema multiforme in patients who suffer from more or less well concealed forms of tuberculosis. This writer believes that such lesions are cutaneous reactions to hematogenously distributed tubercle bacilli, deposited in a hypersensitive skin, and originating in a tuberculous focus, perhaps unrecognized for years. Other investigators have noted the association of tuberculosis and erythema nodosum, and the question remains whether the association is of etiologic significance or merely one of coincidence. According to the definition of a tuberculid, erythema nodosum might be classed perhaps in this group of skin affections, as there is no evidence at hand to warrant the assumption that the lesions are due to hematogenously distributed tubercle bacilli. The work of Rosenow[2] will be recalled, particularly the production of lesions suggesting erythema nodosum in animals by the intravenous injection of a diphtheroid gram-positive diplobacillus, which he found in a series of eight cases of erythema nodosum. Stokes points out that "the pathology of erythema nodosum is such that it seems a rash assumption to attribute it to a single type of organism." But he did not make microscopic and bacteriologic studies of the skin lesions in his cases. He did study the cervical or axillary glands in a few cases, and while many glands were found tuberculous, it is not safe to assume that also the associated skin lesion necessarily must have been due to reactions to the tubercle bacillus. The difficulties in the way of bacteriologic and microscopic study of skin lesions in patients are apparent; but such study is, of course, the only way to substantial progress. The association of erythema nodosum and other skin manifestations with tuberculosis is of great interest, and the exact nature of these skin lesions requires further investigation.

1. Stokes, J. H.: Clinical Studies in Cutaneous Aspect of Tuberculosis, Am. J. M. Sc. 157: 157 (Feb.) 1919; 313 (March) 1919; 522 (April) 1919.
2. Rosenow, E. C.: The Etiology and Experimental Production of Erythema Nodosum, J. Infect. Dis. 16: 367 (April) 1915.

SPORTING NOTE

"Nuxated Iron put added power behind my punch and helped to accomplish what I did at Toledo."—Jack Dempsey.

Thus the new world's champion, in large advertisements appearing in last Sunday's papers—at least in such papers as need the money from such sources. The secret is out. We feel that an apology is due to those of our readers who rely on this department for their knowledge of sporting events. We admit to a lack of enterprise in not discovering earlier what was going on behind the scenes in Mr. Dempsey's training camp. But three short years ago, Mr. Willard was telling the public—at the expense of the manufacturers of Nuxated Iron—that that marvelous "patent medicine" was the secret of his easy victories over Jack Johnson and Frank Moran. Now the Honorable William Harrison ("Jack") Dempsey—also at Nuxated Iron expense—"tells the secret" of his training, and explains how "Nuxated Iron" helped him to whip Jess Willard! Ain't science wonderful!

WHEAT AND MEAT IN THE SOLDIER'S DIET

According to the records of food shipped from this country to our army abroad, one third of the American soldier's rations (34.1 per cent.) consisted of flour, 28.2 per cent. of meat, 8.3 per cent. of coffee, 7.3 per cent. of vegetables, 6.8 per cent. of beans, 3.7 per cent. of sugar, 2.5 per cent. of milk, and 1.7 per cent. of fruits.[1] Some fresh vegetables and fruits were purchased abroad. The nutritive "backbone" of this ration thus consisted of flour and meat, the food products that also furnished the bulk of the protein. Considerable discussion has been waged in the past about the question as to the extent to which meat ought to be made a fundamental part of the army ration. It is therefore interesting to note the correspondence of the proportions of cereal and meat actually adopted to the optimum nutritive use recently described for wheat flour by Osborne and Mendel[2] in

1. Where the War Money Went, Treasury Department Loan Organization, quoted from J. Home Econ. 11: 269 (June) 1919.
2. Osborne, T. B., and Mendel, L. B.: The Nutritive Value of the Wheat Kernel and Its Milling Products, J. Biol. Chem. 37: 557 (April) 1919.

their nutrition experiments at New Haven on animals. Having demonstrated that the proteins of the wheat endosperm (which is equivalent to patent flour) are adequate for maintenance but inadequate for normal growth, even when liberal quantities are consumed, they compared the rate of growth made on the proteins of flour alone with that secured from corresponding quantities of protein, two thirds of which was supplied by wheat flour and one third by egg, milk or meat. The results showed how strikingly these supplements enhance the value of wheat flour as a source of protein for the growing animal; and we may infer that its value for the well-being of the adult is also improved thereby. Since milk and eggs are not yet available as staple commodities under wartime conditions, the wisdom of the wheat-meat regimen is manifest.

VENOUS FACTORS IN THE MAINTENANCE OF BLOOD PRESSURE

Every clinician must be interested in the factors that determine the phenomena of the circulation. The measurement of arterial blood pressure in man has become a matter of daily routine for thousands of physicians, some of whom, we fear, fail to realize the real significance of the data which they are collecting so assiduously. Indeed, until quite recently, the causes which operate to maintain the pressure have been sought almost exclusively in the pumping action of the heart, on the one hand, and the peripheral resistance to the outflow of blood from the arteries, on the other. Gradually recognition has come to the significance likewise of the fact that the output of the heart at each beat is dependent on the degree to which the ventricles become filled with blood. Increased frequency of heart beat cannot alter the output into the arteries and increase the blood pressure therein unless the supply from the venous system keeps pace with it. The optimum frequency of the heart beat will thus be dependent on the state of filling of the great veins. In this country, Yandell Henderson in particular has emphasized the significance of what he terms the venopressor mechanism concerned in filling the heart. Recently, also, R. Tigerstedt[1] of Helsingfors has called special attention to the importance of the adequate filling of the great central veins for a proper functioning of the circulation and a maintenance of good pressure when the peripheral arterial factors are unchanged. Any device that leads to an engorgement of these veins with blood almost invariably conditions a consequent rise in pressure. C. Tigerstedt[2] has shown that this sequence of events can be brought about by immersion baths. Through the pressure exerted by the water on the veins of the periphery and the abdomen, more blood is driven toward the heart, whereupon the output of the heart promptly increases. The extent to which this phenomenon occurs depends, of course, on the degree to which the peripheral vessels are dilated before the bath. R. Tigerstedt has pointed out that whenever the circulation is impaired because of more or less significant peripheral vascular dilatation, the primary difficulty resides, not so much in this dilatation per se or in a decreased working capacity of the heart, but rather, in the peripheral stagnation of the blood which allows too little to reach the central veins that help to fill the heart.

1. Tigerstedt, R.: Die Bedeutung der Blutfülle in den zentralen Venen für den Kreislauf, Finska Läkaresällskapets Handlingar **60**: 517 (May-June) 1918.
2. Tigerstedt, C.: Ueber die Einwirkung von Bädern auf den Kreislauf, Skandin. Arch. f. Physiol. **36**: 322, 1917.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending July 11, there were 12,388 officers in the Medical Corps, a decrease of 343 from the previous week. The Medical Reserve Corps contained 2,901 officers. The total number of physicians discharged since the beginning of the war is 20,806. The records of the discharge branch of the general staff show the following discharges of officers of the Medical Department from Nov. 15, 1918, to noon, July 10, 1919: 2 brigadier-generals, 63 colonels, 431 lieutenant-colonels, 2,172 majors, 8,697 captains, 10,263 lieutenants, making a total of 21,628 officers discharged to date.

All Temporary Officers to Be Discharged by September 30

All temporary officers of the Medical Corps of the Army, as well as other corps, must be discharged by Sept. 30, 1919, under an order issued by the Secretary of War. Announcement is made that this is a blanket order and not subject to exception. This includes all officers whose commissions were for the recent emergency only.

Award of Cross of the Order of the Bath to American Physiologist

Dr. Walter B. Cannon, professor of physiology at Harvard University, and formerly lieutenant-colonel in the United States Army, who in 1917-1918 cooperated with British investigators in the study of wound shock, has been decorated by the British government with the cross of the Order of the Bath, and given the title of companion of that order. An article by Dr. Cannon on shock, delivered at the last annual session of the Association, appears in this issue.

Personal News of the Services

The honorary degree of LL.D. was conferred on Major-Gen. Leonard Wood, M. C., U. S. Army, by Wesleyan University, recently, and by George Washington University, Washington, D. C., June 18.——The order of commander of the Legion of Honor was conferred on Merritte W. Ireland, Major-Gen., M. C., U. S. Army, Surgeon-General of the Army, and Francis A. Winter, Brigadier-Gen., M. C. U. S. Army, commandant of the Army Medical School at the French embassy at Washington, D. C., in recognition of the services of these officers in the medical department of the Army during the war.——Yale University conferred the degree of Doctor of Laws on Sanford H. Wadhams, Lieut.-Col., M. C., U. S. Army, at the commencement exercises, June 18.

Naval Appropriation Bill

The Naval Appropriation Bill passed by Congress carries an appropriation of $7,500,000 for the medical department of the United States Navy, for the fiscal year beginning July 1, 1919. This is to be used for surgeon's necessaries for vessels in commission, navy yards, naval stations, Marine Corps, and for the civil establishment at the several naval hospitals, navy yards, naval medical supply depots, Naval Medical School and Dispensary, Washington, D. C., and for the Naval Academy. It may also be used toward an accumulation of reserve supplies of medical stores. For the contingent expenses of the Bureau of Medicine and Surgery of the Navy $1,000,000 has been appropriated. The principal items for which this is to be expended are hygienic and sanitary investigations, burial of the dead who die within the United States, automobile expenses and for minor improve-

ments at naval hospitals. The sum of $1,000,000 is also appropriated for the care, maintenance and treatment of patients in naval and other hospitals. The Navy Department is authorized to accept a tract of land on the bay of San Diego, Calif., for the establishment of a Naval Training Station there, provided a site for a naval hospital in Balboa Park is also donated.

Appointments to U. S. Public Health Service

The following nominations in the Public Health Service have been sent by the President to the United States Senate:

Dr. Guy McM. Parkhurst to be assistant surgeon in the Public Health Service, to be effective from date of oath.

Dr. Clarence A. Ransom to be assistant surgeon in the Public Service, to be effective from date of oath.

Asst. Surg. David Prather to be passed assistant surgeon in the Public Health Service, to rank as such from April 8, 1919.

Asst. Surg. Louis L. Williams, Jr., to be passed assistant surgeon in the Public Health Service, to rank as such from April 8, 1919.

Asst. Surg. Warren F. Fox to be passed assistant surgeon in the Public Health Service, to rank as such from April 9, 1919.

Promotions in the Navy

Among recent promotions in the Medical Corps of the United States Navy are the following:

Medical Insp. Ammen Farenholt to be a medical director in the Navy, with the rank of captain, from the 15th day of October, 1917.

Medical Insp. Middleton S. Elliott to be a medical director in the Navy, with the rank of captain, from the 1st day of January, 1918.

Medical Insp. Dudley N. Carpenter to be a medical director in the Navy, with the rank of captain, from the 1st day of February, 1918.

The following named surgeons to be medical inspectors in the Navy, with the rank of commander, from the 15th day of October, 1917: Archibald M. Pauntleroy, Joseph P. Traynor and John L. Neilson.

The following named surgeons to be medical inspectors in the Navy, with the rank of commander, from the 1st day of January, 1918: Charles C. Grieve, John D. Manchester, James S. Woodward and James A. Randall.

Surg. Robert G. Heiner to be a medical inspector in the Navy, with the rank of commander, from the 1st day of February, 1918.

Surg. Owen J. Mink to be a medical inspector in the Navy, with the rank of commander, from the 1st day of July, 1918.

Surg. Harold W. Smith to be a medical inspector in the Navy, with the rank of commander, from the 8th day of February, 1919.

Awards of Military Cross

The Military Cross has been awarded to the following named medical officers:

Lieut. SAMUEL S. ADAMS, Washington, D. C.; Lieut. MAURICE LINDSEY ALLEN, Galion, O.; Capt. STANHOPE BAYNE-JONES, Baltimore; Lieut. DANIEL EDWARD BERNEY, Scranton, Pa.; Lieut. GOUVERNEUR HENRY BOYER, Pottsville, Pa.; Lieut. JAMES BROOMFIELD CLINTON; Lieut. JAMES ELMER CROOP, Erie, Pa.; Lieut. DRAYTON HOWARD DOHERTY, Selma, Ala.; Lieut. CARL ELLIS DUNAWAY, Valdosta, Ga.; Lieut. FRANK ALEXANDER EVANS, Baltimore; Lieut. HAROLD ELMER FOSTER, Castile, N. Y.; Lieut. LINWOOD MALONE GABLE, New York City; Capt. HENRY CHRISTIAN GALSTER, Hudson, N. Y.; Lieut. JOHN GREGG, Lieut. ALBERT ALLEN GROSSMAN, Portland, Ore.; Lieut. THOMAS FARRIS HALE, Louisville, Ky.; Lieut. PERCY GATLIN HAMLIN, Philadelphia; Lieut. ABRAHAM IRVING HASKELL, Minneapolis; Lieut. ALSON JOY HULL, Troy, N. Y.; Lieut. WILLIAM ADDISON JACQUES, New York City; Lieut. ALBERT LESTER JONES, Weatherford, Texas; Capt. HOWARD FRANCIS KANE, Washington, D. C.; Capt. JOHN EDWARD KELLEY; Chicago; Lieut. BALDWIN LONGSTRETH KEYES; Lieut. CORNELIUS THEODORE McCARTY, Philadelphia; Lieut. ROY RALPH McHENRY, Rogers, Ark.; Capt. WILLIAM FULFORD SAPPINGTON, Hancock, Md.; Lieut. EDGAR FERDINAND SCHMITZ, St. Louis; Lieut. JOHN WESLEY SHERRICK, Ann Arbor Mich.; Lieut. THEODORE HIGGINS SWEETSER, New York City; Lieut. GUY DANIEL TIBBETTS, Bennington, N. H.; Lieut. HARVEY CLAUDE UPDEGROVE, Easton, Pa.; Capt. THOMAS EDWARD WALKER, Cleveland; Lieut. WILLIAM AUGUSTUS WILLIAMS, Monticello, Ga.; Lieut. WILLIAM FREDERICK WILLIAMS, Jr., Cumberland, Md.; Lieut. JAMES W. ALDRIDGE, Covington, Ind.; Lieut. HUGO ALEXANDER, Lieut. WILMOT AYRES, Bedford, Pa.; Lieut. IRVING FRANCIS BARNETT, Chicago; Lieut. WILLIAM HATFIELD CAINE, Cleveland; Lieut. WILLIAM ANDREW ROBERTSON CHAPIN, Springfield, Mass.; Lieut. EARL RAY CHAMNESS; Lieut. EDWARD ALBERT CHRISTOFFERSON, Chicago; Lieut. MILTON BUELL COFFMAN, Richmond, Va.; Lieut. FRED WALTER COMSTOCK, New Haven, Conn.; Lieut. NEIL AVON DAYTON, Burton, O.; Lieut. GRIFFITH ALONZO DEMAY, Indianola, Neb.; Lieut. LOUIS WILLOUGHBY DESPREZ, Tuscumbia, Ala.; Lieut. ROY ARCHIE DOUGLASS, Huntington, Tenn.; Lieut. JOHN FRANCIS DOOLING, Brooklyn; Lieut. THOMAS LAWRENCE DOYLE, Tremont, Pa.; Lieut. WILLIAM BENEDICT EVANS, Chester, Pa.; Lieut. LAWRENCE BRYANT FARRIOR, Mobile, Ala.; Lieut. ROY G. GILES, Belton, Texas; Lieut. ALEXANDER JAMES GILLIS, Baltimore; Lieut. THOMAS EVERETT GRIFFITH, Lieut. TORRANCE JOHN HANLON, Donora, Pa.; Lieut. ALLEN GEORGE HEARD, Galveston, Texas; Lieut. WILLIAM YOUNG HOLLINGSWORTH, Bel Air, Md.; Lieut. JAMES HENRY KEELING, Albany N. Y.; Lieut. ANDREW KNOX, Philadelphia; Lieut. GEORGE SCOTT LAMBETH, Bronson, Kan.; Lieut. BURTON MALTBY, Liberty, Mo.; Lieut. ROBERT N. MacGUFFLE, Passaic, N. J.; Lieut. WINTHROP ESSEX McGINLEY, New London, Conn.; Lieut. WILLIAM GEORGE MILHOLLAND, Lieut. DANIEL JOSEPH MURPHY, New Orleans; Lieut. CHARLES QUAY NORTH, Punxsutawney, Pa.; Lieut. CLARENCE EDWARD NORTHCUTT, Lexington, Okla.; Lieut. EDWARD LAURENCE PATTERSON, Barnwell, S. C.; Lieut. OSCAR HEDBERG PETERSON, Lamoni, Iowa; Lieut. PAUL JAMES PRESTON, Minneapolis; Lieut. GEORGE H. REDDICK, Wabeno, Wis.; Lieut. SYDNEY S. SCHOCHET, Chicago; Lieut. ANGUS JAMES SMITH, Greenville, Fla.; Capt. WILLIAM LESTER SMITH, Toledo, Ill.; Lieut. FRED OSCAR STONE, Andersonville, Tenn.; Lieut. FENTON TAYLOR, New York City; Major LAURENCE MATHEWS TAYLOR, Lieut. CASSELL CLARK TUCKER, Boston; Lieut. ROBERT VINEYARD, St. Louis.

Distinguished Service Order

The following medical officers are to be Honorary Companions of the Distinguished Service Order:

Lieut. CHARLES EARL FALLET, De Soto, Mo.; Lieut. RAYMOND HORACE GEORGE, Chicago; Lieut. WOOSTER HASSELL HOUSE, Oak City, N. C.; Lieut. FRANK HARRISON McGREGOR, Mangum, Okla.; Capt. HAROLD JAMES MORGAN, Lieut. GILBERT SEYMOUR OSNICUP, New York City; Lieut. GLEN DEWEY RANSOM, Big Rapids Mich.; Lieut. FRANK E. SCHRAM, Chicago; Major EMANUEL GOLDSTEIN, Brooklyn; Capt. GEORGE PATRICK O'MALLEY, Cleveland.

Bar to the Military Cross

The following medical officers have been awarded a Bar to the Military Cross:

Lieut. CORNELIUS THEODORE McCARTHY, Philadelphia; Lieut. JAMES BROOMFIELD CLINTON, Philadelphia; Lieut. LAWRENCE BRYANT FARRIOR, Mobile, Ala.; Lieut. HAROLD ELMER FOSTER, Castile, N. Y.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—McLean, C. C. (L.)
Wilson, O. E. (L.)
Buhl—Booth, J. L. (C.)
Piedmont—Vansant, J. P. (L.)
Samson—Meriwether, F. V. C. (C.)
Selma—Gay, S. G. (C.)
Swain—Sentell, J. H. (L.)
Theodore—Walker, H. S. J. (C.)
Thomasville—Kimbrough, R. M. (L.)

ARKANSAS

Pine Bluff—Brunson, A. (C.)

CALIFORNIA

Ione—Hawkins, G. G. (C.)
Los Angeles—Coy, L. M. (L.)
Marxmiller, H. G. (M.)
McClurkin, A. A. (L.)
Moss, M. H. (C.)
Oakland—Berry, S. F. (L. C.)
Byrnes, J. P. (C.)
Von Adelung, E. (C.)
Orange—Bradshaw, J. F. (C.)
Oxnard—Avery, R. W. (C.)
Patton—Meyer, E. W. (L.)
Redlands—Avey, J. L. (C.)
San Francisco—Baldwin, W. L. (L. C.)
Barkan, H. (C.)
Fleming, H. W. (C.)
Hutchings, R. K. (C.)
Shields, J. W. (M.)
Shufelt, A. A. (L.)
Wright, H. W. (C.)
San Luis Obispo—Guilfoil, J. A. (L.)
Stockton—Cochran, J. S. (L.)
Susanville—Dozier, W. E. (C.)
Woodland—Fairchild, F. R. (M.)

COLORADO

Colorado Springs—Bortree, L. W. (C.)
Dennis, F. L. (C.)
Colorado Springs—Gillett, O. R. (C.)
Timmons, E. L. (C.)
Craig—Brown, M. D. (C.)
Denver—O'Donnell, F. J. (C.)
Edgewater—Marshak, M. I. (L.)
Pueblo—Killough, H. B. (C.)

CONNECTICUT

Hartford—Borden, C. H. (L.)
Thomas, H. (L.)
Manchester—Higgins, J. A. (C.)
New Haven—Honeij, A. A. (M.)
New London—McGinley, W. E. (C.)
Waterbury—Quinn, R. J. (L.)

DELAWARE

Wilmington—Gross, A. J. (L.)
Washburn, V. D. (L.)

DISTRICT OF COLUMBIA

Washington—Conklin, C. B. (L.)
Lyon, M. W., Jr. (C.)

FLORIDA

Bronson—Markey, M. R. (L.)
Jacksonville—Handley, D. R. (C.)
Parrott, A. R. (M.)
Lake City—Long, J. P. (L.)
Monticello—McEachern, J. R. (M.)
Sanford—Stevens, R. E. (C.)

GEORGIA

Atlanta—Cooper, J. H. (C.)
Augusta—Spivey, O. S. (L.)
Camilla—Spence, J. M. (C.)
Fitzgerald—Luke, J. M. J. (L.)
Griffin—Grye, A. H. (C.)
Monroe—Aycock, T. R. (C.)
Ochlocknee—Winchester, M. E.
Pitts—Dorsey, H. A. (L.)

IDAHO

Lewiston—Perkins, L. J. (C.)
Pocatello—Newton, A. M. (C.)

ILLINOIS

Bloomington—Rogers, A. E. (C.)
Chicago—Amerson, G. C. (L. C.)
Bierig, S. (L.)
Billings, F. (Col.)
Boren, C. H. (L.)
Blyes, W. J. (L.)
Cloud, H. B. (L.)
Dagnault, T. V. (L.)
Duffy, F. T. (L.)
Fouts, R. M. (L.)
Fox, C. M. (C.)
Funk, N. E. (C.)
Henderson, R. H. (C.)
Hopkins, P. E. (C.)
Johnston, L. C. (C.)
Leenheer, C. A. (M.)
Martin, A. (C.)
McDonell, C. L. (L.)
McKenna, C. M. (C.)
Perry, E. B. (L.)
Reinsch, H. (L.)
Rentfro, C. C. (C.)
Schram, F. E. (C.)
Sweet, W. C. (C.)
Thompson, A. (L.)
Collison—Campbell, J. H. (L.)
Decatur—Lyon, G. E. (L.)
East Chicago—Spear, R. (M.)
East St. Louis—McQuillan, A. B. (C.)
Evanston—Balderston, S. V. (M.)
Maroa—McLean, E. P. (L.)
Mattoon—Parrish, B. D. (C.)
Mount Carmel—Wilson, G. H. (L.)
Mount Vernon—Poole, C. J. (M.)
New Berlin—McLaughlin, C. (L.)
Nilwood—Morgan, D. A. (L.)
Oak Park—Vaughan, H. G. (C.)
Peoria—Eaton, M. T. (L.)
Philo—Ryan, W. D. (L.)
Rockford—Harvey, H. (C.)
Rock Island—Hollowbush, J. R. (M.)
Watseka—Van Kirk, J. A. (L.)
Waverly—Allyn, W. H. (C.)

INDIANA

Bluffton—Brickley, H. D. (L.)
Bunker Hill—Moss, W. C. (C.)
Columbus—Thorne, W. G. (C.)
Edinburg—Bice, L. C. (C.)
Elizabethtown—Redman, L. H. (C.)
Evansville—Wilson, A. H. (C.)
Fort Wayne—Dancer, C. R. (C.)
Hammond—Chidlaw, B. W. (C.)
Hartford City—Corey, C. W. (L.)
Huntingsburg—McKinney, S. L. (C.)
Madison—Denny, F. C. (L.)
Marion—Davis, M. S. (L.)
New Albany—Fox, C. C. (C.)
Salamonia—Jones, H. H. (L.)
Terre Haute—Freed, J. E. (C.)
Wabash—Jewett, L. E. (M.)
Warsaw—Murphy, S. C. (C.)

IOWA

Britt—Chester, W. S. (C.)
Centerville—Marker, J. I. (L.)
Charles City—Woodruff, R. H. (C.)
Clarinda—Van Meter, F. J. (L.)
Fort Madison—Wahrer, F. L. (L.)
Grinnell—Padgham, J. T. (C.)
Hampton—Johnston, G. F. (C.)
Kalona—Wolfe, S. H. (L.)
Keokuk—Gilfillan, B. L. (M.)
Monticello—Osborn, D. H. (L.)
Prairie City—Van Voorhis, C. R. (C.)
Rock Valley—Huizenga, R. (C.)
Sloan—Prescott, L. W. (C.)
Steamboat Rock—Caldwell, J. W. (C.)

KANSAS

Galena—Shelley, A. A. (C.)
Garland—Albright, F. C. (C.)
Harveyville—Tomlinson, L. M. (C.)
Minneapolis—Harvey, F. E. (M.)
Topeka—Ott, L. S. S. (C.)
Stewart, J. G. (C.)

KENTUCKY

Lexington—Marks, S. B. (C.)
Louisville—Davis, E. C. (L.)
Hartman, H. G. (L.)
Trawick, J. D. (C.)
Sedalia—Page, M. W. (C.)
Somerset—Griffin, T. R. (M.)
Winchester—Caywood, W. C. (C.)

LOUISIANA

New Orleans—Barker, W. E., Jr. (L.)
Heninger, B. R. (L.)
Shreveport—Bodenheimer, J. M. (L.)

MAINE

Franklin—Underhill, C. S. (C.)
Ogunquit—Richardson, H. B. (L.)
Waterville—Desjardins, A. U. (M.)

MARYLAND

Baltimore—Byrne, J. F. (M.)
Carroll, H. R. (L.)
Carter, H. R. (M.)
Dorsey, J. L. (C.)
Edwards, C. R. (C.)
Erkenbrack, C. P. (C.)
Hussey, R. G. (M.)
Linthicum, E. S. (M.)
Moise, T. S., Jr. (L.)
Powers, F. J. (C.)
Curtis Bay—Scott, W. D., Jr. (M.)
Vienna—Lamkins, E. E. (C.)

MASSACHUSETTS

Boston—Davis, F. A. (C.)
Felch, G. H. (L.)
Kauffman, A. B. (L.)
Nichols, A. (C.)
Osgood, R. B. (L. C.)
Sturgis, C. C. (L.)
Brockton—Leavitt, F. H. (C.)
Cambridge—Berry, F. B. (C.)
Fitchburg—Lane, C. R. (L.)
Holyoke—Drouin, W. G. (C.)
Lynn—Judkins, C. M. (C.)
Marlboro—Lennon, E. A. M. (L.)
Robinson, H. A. (C.)
Milton—Munro, D. C. (C.)
Palmer—Greene, R. A. (C.)
Springfield—Schillander, C. A. (L.)
West Springfield—Bostick, W. J. (C.)
Worcester—Emerson, K. (M.)
Lemaire, W. W. (C.)

MICHIGAN

Ann Arbor—Foster, N. B. (L. C.)
Keim, H. L. (L.)
Bay City—Perkins, K. C. (M.)
Randall, F. H. (L. C.)
Detroit—Blanchard, F. N. (L.)
Catherwood, A. E. (C.)
Dibble, H. F. (C.)
Gramley, W. (C.)
Jenne, B. H. (C.)
Kidner, F. C. (M.)
Reye, H. A. (L.)
Smeck, A. E. (C.)
Flint—Goering, G. R. (C.)
Grand Rapids—Grube, H. A. (L. C.)
Highland Park—Juera, R. H. (C.)
Marquette—Carriel, H. T. (C.)
Parshallville—Rynearson, W. J. (C.)
Romeo—Greenshields, R. M. (C.)
Saginaw—Alger, G. L. (C.)

MINNESOTA

Bricelyn—Stewart, O. E. (C.)
Hancock—Ranson, M. T. (C.)
Lakefield—Ranson, M. T. (C.)
Mankato—Wentworth, A. J. (C.)
Mazeppa—Heagerty, W. B. (M.)
Minneapolis—Morrias, H. A. (M.)
Zinkin, T. (L.)
Rensselaer—Baerckstein, I. R. (C.)
Rochester—Marsh, H. E. (L.)
Wilson, L. B. (Col.)
St. Paul—Ferguson, J. C. (M.)
Ghent, G. K. (C.)
Whitmore, F. W. (L.)
Truman—Hunte, A. F. (L.)

MISSISSIPPI

Jackson—Berry, W. G. (L.)
Lula—Shurley, E. R. (L.)
Meridian—Garner, M. C. (M.)

MISSOURI

Excelsior Springs—Craven, Y. D. (C.)
Independence—Stuart, F. I. (C.)
Kansas City—Dickson, F. D. (M.)
Kirksville—Grim, E. C. (C.)
Kirkwood—Bowles, T. K. (L.)
St. Louis—Fleisher, M. S. (C.)
Funsch, E. C. (C.)
McKenzie, E. M. (L.)
Ranson, F. B. (L.)
Upshaw, H. T. (L.)
Washington—Seibert, D. A. (L.)
Webb City—Willey, O. S. (C.)

MONTANA

Clydepark—Denney, J. C. (C.)
Great Falls—Coulter, C. F. (L.)
Missoula—Turman, G. F. (L.)

NEBRASKA

Ogallala—Wallingsford, C. C. (L.)
Ainsworth—Jones, T. K. (M.)
Albion—Walker, H. P. (C.)
Calro—Methany, S. E. (L.)
Champion—Legg, C. E. (M.)
Crawford—Ivins, R. L. (L.)
Dwight—Dunram, C. B. (C.)
Edgar—Jones, R. T. (C.)
McCook—Fahnestock, C. L. (C.)
Reed, R. R. (L.)
Nebraska City—Koser, M. L. (C.)
North Platte—Fetter, E. W. (C.)
Omaha—Shook, C. F. (C.)
Springfield—Peters, J. A. (C.)

NEVADA

Yerington—Leavitt, G. E. (C.)

NEW HAMPSHIRE

Berlin—McGee, E. R. (L.)
Manchester—Wilkins, G. C. (M.)

NEW JERSEY

Burlington—Rodgers, H. L. (L.)
Dover—Baker, A. L. L. (C.)
Hackensack—Finke, G. W. (L.)
Jersey City—Bott, J. A. (L.)
Finn, F. A. (C.)
Montclair—Schimmelpfennig, R. D. (C.)
Passaic—Gluck, C. (L.)
Warren, D. E. (C.)
Paterson—Connolly, T. V. (L.)
Plainfield—Leggett, T. H., Jr. (L.)
Somerville—Lawton, A. A. (C.)
Trenton—Dorety, P. J. (C.)
Richardson, H. T. (L.)
Slack, C. J. (C.)

NEW MEXICO

Hanover—Davis, C. W. (L.)
Reserve—Riddle, H. K. (L.)

NEW YORK

Albany—MacTaggart, R. A. (C.)
Amsterdam—Thompson, J. B. (C.)
blackwell Island—Howe, C. E. (L.)
Brooklyn—Berger, E. L. (L.)
Bunker, H. A. (C.)
Doyle, S. B. (L.)
Gissel, H. W. (C.)
Grant, L. J. (C.)
Jennings, E. E. (L. C.)
Levy, S. C. (L.)
Rossiter, P. E. (C.)
Seidenstein, J. J. (L.)
Stahl, M. (L.)
Thomas, S. S. (C.)
Buffalo—Evans, J. H. (C.)
Canaseraga—Schwan, C. G. (L.)
Catskill—Honeyford, L. B. (C.)
Delmar—Holmes, T. M. (L.)
Elmhurst—Combs, J. D. (C.)
Falconer—Stewart, A. J. (L.)
Fulton—Fox, F. E. (C.)
Hamburg—Minkel, A. C. (L.)
Hornell—Hart, J. D. (L.)
Hudson—Mambert, J. W. (L.)
Huntington—MacLean, B. P. (C.)
Hyde Park—Cronk, J. M. (C.)
Mendon—Wright, E. (L.)
New York—Brown, H. R. (L.)
Conklin, W. H. (L.)
Dwight, K. (C.)
Emerson, H. (Col.)
Giffen, S. D. (C.)
Glaeser, A. T. (L.)
Greenhouse, A. C. (L.)
Haskin, W. H. (L. C.)
Kraus, W. M. (C.)
McSweeney, J. A. (C.)
Muller, H. R. (L.)
Schwerdfeger, O. M. (M.)
Thomas, H. M., Jr. (L.)
Walker, J. B. (Col.)
Witt, S. E. (L.)
Profile House—Smith, J. F. (L.)
Rome—Marshall, R. J. (C.)
Saratoga Springs—Eaton, F. G. (C.)
Saugerties—Diedling, R. F. (C.)
Tupper Lake—Barrett, P. J. (L.)
Watertown—Farmer, H. G. (M.)
Westernville—MacFarland, H. D. (L.)
Whitehall—Plunkett, R. E. (C.)
Wilton—Parkinson, V. M. (L.)
Youngstown—Schmid, H. (C.)

NORTH CAROLINA

Clarkton—Clark, D. D. (C.)
Powelton—Nicholson, N. G. (L.)
Warrentown—Davis, R. B. (C.)

NORTH DAKOTA

Cogswell—Howard, C. E. (C.)
Devils Lake—Jamieson, G. V. (C.)
Mandan—Aylen, W. C. (L.)

OHIO

Chillicothe—Brown, H. R. (L.)
Cleveland—Berr, A. H. (L.)
Davis, H. H. (C.)
Cleveland—Fried, A. E. (L.)
Krause, I. W. (L.)
Lichtig, H. A. (L.)
McNamee, E. P. (L.)
Neitz, E. F. (C.)
Dayton—Koppe, H. F. (C.)
Edgerton—Curl, G. R. (C.)
Marion—Dombaugh, R. S. (L.)
Norwood—Eagon, S. E. (L.)
Saur, L. O. (L.)
Sparta—Larimore, H. B. (L.)
Youngstown—Mossman, R. G. (L.)

OKLAHOMA

Blackwell—Gearhart, A. P. (C.)
Clinton—Comer, M. C. (L.)
Pawnee—Weller, R. E. (C.)
Tahlequah—Peterson, C. A. (L.)

OREGON

Cove—McCown, A. C. (C.)
Newberg—Littlefield, L. A. (M.)
Portland—Belknap, H. P., Jr. (L.)
Dillehunt, R. B. (M.)
Sargentich, S. P. (C.)
Selling, L. (M.)

PENNSYLVANIA

Ambler—Godfrey, A. (C.)
Ashland—Constien, R. A. (C.)
Boyertown—Dotterrer, C. B. (M.)
Canonsburg—Hazlett, E. L. (L.)
Chambersburg—Seaton, L. H. (C.)
Columbia—Shillott, C. J. (C.)
Dickson City—Lonergan, P. A. (L.)
Erie—Smith, B. B. (L.)
Stilley, J. C. (C.)
Hazelton—Cuozzo, J. A. (L.)
Hillsville—McWilliams, W. M. (L.)
Marcus Hook—Whitehouse, W. J. (M.)
Oakmont—Edgar, J. C. (M.)
Penn Yan—Leader, G. H. (L.)
Philadelphia—Astrin, H. T. (C.)
Bedrossian, E. H. (L.)
Campbell, R. F. (L.)
Corcoran, M. P. (L.)
Davis, T. C. (C.)
Dorrance, G. M. (M.)
Ely, W. C. (L.)
Kalodner, E. J. (L.)
Keyes, B. L. (C.)
Means, P. B. (L.)
Morrison, W. F. (C.)
Muller, G. P. (M.)
Shallow, T. A. (C.)
Torrey, R. G. (M.)
Walker, W. (M.)
Walkling, A. A. (L.)
Pittsburgh—Buck, C. J. (C.)
Dillinger, G. A. (L. C.)
King, R. H. (C.)
Robinson, B. (C.)
Steffy, J. L. (L.)
Turner, H. H. (C.)
Wolfe, C. H. (L.)
Reading—Glick, S. B. (L.)
Scranton—Flynn, R. E. (C.)
Redding, L. G. (L.)
Seminole—Lamp, C. B. (C.)
Turbotville—Muffly, G. W. (L.)
Washington—Rinehardt, S. H. (C.)
West Alexander—Timmons, J. M. (C.)
Wilkes Barre—Tischler, M. (L.)
York—May, C. H. (M.)

SOUTH CAROLINA

Buffalo—Salley, F. P. (M.)
Greenville—Wilson, T. R. (M.)
Sharon—Blair, J. L. (L.)

SOUTH DAKOTA

Platte—Brooks, C. F. (C.)

TENNESSEE

Chattanooga—McIsaac, F. C. (C.)
Lobelville—Cagle, W. D. (C.)
Nashville—Mences, T. O. (L.)
Normal—Verdel, L. F. (L.)

TEXAS

Cedar Bapou—Schilling, J. G. (L.)
Dallas—Bland, L. F. (L.)
Terrell, S. L. (M.)
DeKalb—Beck, J. W. E. H. (L.)
Dublin—Barnett, H. N. (C.)
Edgewood—Farrell, C. E. (L.)
Gonzales—Dawe, W. T. (C.)
Greenville—Dickens, W. M. (L.)
Odell—Rogers, A. C. (L.)
Ranger—Terrell, C. O. (C.)
Refugio—Glover, G. E. (C.)
Taylor—Thomas, J. C. (C.)
Waco—Jones, S. R. (L.)
Murphey, P. C. (C.)
Winchell—Locker, H. T. (L.)

UTAH

Ogden—Whalen, W. E. (M.)

VERMONT

Bristol—Williamson, H. L. (L.)
Burlington—Larner, A. L. (C.)
Morrisville—Bates, G. L. (M.)

VIRGINIA

Radford—Poindexter, W. O. (C.)
Roanoke—Davis, P. (C.)
Hurt, G. S. (L.)
Staunton—Tynes, A. L. (C.)
Warrenton—Trow, W. G. (M.)

WASHINGTON

Cashmere—Parker, W. G. (C.)
Coupeville—Risline, E. F. (C.)
Metaline Falls—Hiett, J. (M.)
North Yakima—Keeler, C. E. (C.)
Seattle—Ballance, C. (L.)
Schrock, E. B. (C.)
Turner, F. A. (C.)
Spokane—Lupton, I. M. (C.)
Rohrer, P. A. (C.)
Tacoma—Gammon, C. P. (M.)
Wilson, C. S. (L. C.)
Wenatchee—Gerhardt, A. E. (M.)

WEST VIRGINIA

Clarksburg—Haynes, H. H. (C.)
Fairmont—Carr, H. H. (C.)
Huntington—Bobbitt, R. M. (C.)
Yost, G. (C.)
Martinsburg—Bitner, E. H. (M.)

WISCONSIN

Barron—Coleman, H. M. (C.)
Barton—Driessel, S. J. (C.)
Cazenovia—Schlenker, G. H. (C.)
Hancock—Joseph, W. A. (C.)
Hudson—Burns, H. J. (C.)
Kenosha—Andre, F. E. (C.)
Milwaukee—Wilske, C. A. (L.)
Neenah—Del Marcelle, C. (C.)
Oconto—Clarke, T. C. (C.)
Racine—Salbenier, W. P. (C.)
Shawano—Schroeder, E. L. (L.)
Sheboygan—Bedford, E. W. (C.)
Wauwatosa—McCoy, H. J. (L.)
Sargeant, R. W. (C.)
Whitewater—Miller, H. C. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Feldman, A.

ILLINOIS

Chicago—Hoodlett, J. J.
Spawr, C. V.
Peoria—Bradley, R. C.

LOUISIANA

New Orleans—Foster, R. H.
Rankin, R. B.

MASSACHUSETTS

Boston—Holmes, F. G.

MINNESOTA

Minneapolis—Tyrrell, C. C.

NEBRASKA

Elba—Frandsen, C.

NEW YORK

Auburn—Bennett, A. J.
New York—Gould, E. W.

NORTH CAROLINA

Asheville—Tennent, G. S.
Williamston—Harrell, W. H.

OHIO

Circleville—Jonnes, L.

PENNSYLVANIA

Greenville—Doyle, J. A.

VERMONT

Burlington—Andrews, B. F.

VIRGINIA

Richmond—Allen, C. D.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Arizona

To Hampton, Va., from Camp Jackson, Capt. R. R. KNOTTS, Yuma.

Arkansas

To Edgewood, Md., Edgewood Arsenal, from Camp Dix, Capt. P. E. THOMAS, Jr., Clarendon.

California

To Camp Lee, Va., from Camp Zachary Taylor, Lieut. H. W. SPIERS, Los Angeles.
To Camp Meade, Md., base hospital, from Army Medical School, Lieut. L. O. W. MOORE, Alameda.
To Fort Benjamin Harrison, from Camp Bowie, Major C. E. SISSON, Norwalk; from Camp Dix, Capt. W. C. S. KOEBIG, Los Angeles.
To Fort Leavenworth, Kan., from Camp Dix, Lieut. T. C. SCHNEERER, Los Angeles.
To Fort Sheridan, Ill., from Camp Kearney, Capt. R. L. TEBBITT, Los Angeles.
To Hoboken, N. J., Lieut. D. B. ZBINDEN, Downey.
To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Capt. L. J. SCHERMERHORN, Stockton; Lieut. R. A. POWERS, San Francisco; from Fort Douglas, Major A. D. S. McCOY, Pasadena.

Colorado

To Camp Travis, Texas, from San Francisco, Major R. E. TALBOT, Denver.
To Washington, D. C., Surgeon-General's Office, from Camp Lee, Lieut. R. L. CHARLES, Denver.

Connecticut

To New Haven, Conn., from Camp Upton, Lieut. S. MAISLEN, Hartford.

District of Columbia

To Camp Bowie, Texas, from Walter Reed General Hospital, Major P. E. McNABB.
To Colonia, N. J., from Walter Reed General Hospital, Lieut.-Col. N. T. KIRK.
To Fort Bayard, N. M., from Surgeon-General's Office, Col. E. M. WELLES, Jr.
To Fort McHenry, Md., from Surgeon-General's Office, Col. H. PAGE.
To Fort Sheridan, Ill., from Washington, D. C., Lieut.-Col. T. E. DARBY.
To Washington, D. C., from Fort Oglethorpe, Major L. C. ECKER, Washington. Surgeon-General's Office, from Hoboken, Major J. W. BURKE, Washington; from Newport News, Major M. H. DARNALL, Washington.

Florida

To Astoria, N. Y., from Camp Dix, Capt. W. P. DICKINSON, Nichols.
To Fort McPherson, Ga., from Camp Jackson, Capt. A. M. C. JOBSON, Nichols.

Georgia

To Camp Mormoyle, Texas, from Roland Park, Lieut. C. L. EDGE, Columbus.
To Fort McPherson, Ga., from Camp Dix, Lieut. W. J. TURNER, Ashburn; from Camp Jackson, Major R. H. STANLEY, Augusta.
To Fort Sheridan, Ill., from Camp Dix, Capt. I. C. CASE, Atlanta.
To Spartanburg, S. C., from Camp Lee, Capt. L. F. WRIGHT, Atlanta.
The following order has been revoked: *To report to the commanding general, American Expeditionary Forces*, from Camp Gordon, Capt. R. B. HARDING.

Illinois

To Camp Dodge, Iowa, from Camp Dix, Major F. DEACON, Chicago.
To Camp Lee, Va., base hospital, from St. Louis, Major D. E. EGAN, St. Charles.
To Camp Sherman, Ohio, from Camp Bowie, Capt. J. K. POLLOCK, Elgin; from Camp Grant, Lieut. A. SUMMERS, Chicago.
To Chicago, Ill., from Washington, D. C., Col. F. H. MARTIN, Chicago.
To Colonia, N. J., from Camp Sherman, Lieut. H. M. GOODYEAR, Morton.
To Fort Riley, from Camp Dix, Capt. W. H. RUPERT, Chicago.
To Fort Sheridan, Ill., from Camp Dix, Major F. A. MARTIN, Tower Hill.
To Fox Hills, N. Y., from Camp Dix, Capt. A. J. WEIRICK, Marseilles; from Camp Upton, Capt. H. B. THOMAS, Chicago; from Cape May, Capt. C. J. DAVIS, Deerfield.
The following orders have been revoked: *To Fox Hills, N. Y.*, from Camp Dix, Major G. G. DAVIS, Chicago. *To Spartanburg, S. C.*, from Fort Oglethorpe, Lieut. C. E. KELSO, Thomasboro.

Indiana

To Camp Sherman, Ohio, from Camp Bowie, Capt. C. A. UNDERWOOD, Indianapolis.
To Fort Benjamin Harrison, from Camp Dix, Capt. J. C. BOHN, Terre Haute; from Panama Canal Department, Capt. I. M. CASEBEER, Newport.
To Fort McPherson, Ga., from Camp Dix, Lieut. T. P. GOODWIN, South Bend.
To Fox Hills, N. Y., from Cape May, Lieut. F. C. POTTER, Indianapolis.
To Hoboken, N. J., Cant. C. J. TUCKER, Rushville.
To Washington, D. C., Surgeon-General's Office, from Camp Abraham Eustis, Capt. E. A. WILLIS, Indianapolis.

Iowa

To Camp Grant, Ill., base hospital, from Camp Dix, Capt. E. D. McLEAN, Oskaloosa.
To Carlisle, Pa., from Camp Dodge, Col. H. D. BLOOMBERGH.
To Fort Des Moines, Iowa, from Camp Dix, Lieut. C. S. FELT, New Providence.
To Fort Ontario, N. Y., from Camp Dix, Capt. A. NEGUS, Keswick.
To Fort Sam Houston, Texas, base hospital, from Camp Dix, Lieut. R. C. JACKSON, Independence.
To Fort Sheridan, Ill., from Fort McHenry, Capt. M. B. DUNNING, Conway.
To report to the commanding general, Panama Canal Department, from Camp Dodge, Capt. F. S. MATLACK.

Kansas

To Fort Riley, from Fort McHenry, Major L. A. CLARY, Hutchinson.
The following order has been revoked: *To Fort Riley*, base hospital, from Spartanburg, Lieut. H. R. SCATES, Baxter Springs.

Kentucky

To Camp Sherman, Ohio, from Hoboken, Major F. B. DeWITT, Rockport.
To Fox Hills, N. Y., from Cape May, Lieut. H. J. BEARD, Hardinsburg.

Louisiana

To Hoboken, N. J., Capt. T. R. RUDOLF, New Orleans.

Maine

To Fort Sam Houston, Texas, base hospital, from Fort Benjamin Harrison, Major F. E. LESLIE, Andover.

Maryland

To Fort McHenry, Md., from Camp Jackson, Lieut. K. H. DOEGE, Baltimore.
To Fort McPherson, Ga., from Cape May, Major R. FAYERWEATHER, Baltimore.
To Fox Hills, N. Y., from Cape May, Lieut. J. H. BAIRD, Baltimore.
To Otsen, N. C., from Pittsburgh, Lieut. B. B. BRUMBAUGH, Denton.

Massachusetts

To Camp Lee, Va., from Camp Dix, Major S. A. MOULTON, Winthrop.
To Carlisle, Pa., from Camp Upton, Major H. A. JOHNSON, Lynn.
To Fort McPherson, Ga., from Camp Dix, Lieut. E. H. MacMICHAEL, Malden.
To Fort Ontario, N. Y., from Camp Dix, Capts. L. H. LIMAURO, Lynn; H. R. COBURN, Tewksbury.
To Fort Porter, N. Y., from Plattsburg Barracks, Capt. H. L. STICK, Baldwinsville.
To Fox Hills, N. Y., from Camp Dix, Lieut. H. L. DAVIS, Lynn; from Camp Upton, Lieut. L. S. KEMP, Canton; from Cape May, Capt. G. BERRY, Worcester; Lieuts. T. B. RAFFERTY, Lynn; G. E. DEERING, Worcester.
To Otisville, N. Y., from Camp Dix, Lieut. E. J. GRAINGER, Winthrop.
To Plattsburg Barracks, N. Y., from Camp Jackson, Lieut. J. E. BANQUER, Boston.

Michigan

To Camp Custer, Mich., from Camp Dix, Majors C. A. MITCHELL, Benton Harbor; V. D. BARNES, Morenci.
To Camp Meade, Md., from Camp Upton, Capt. H. S. COLE, Whitehall.
To report to the commanding general, Southeastern Department, from Camp Dix, Lieut. A. B. EGAN, Muskegon.
To Walter Reed General Hospital, D. C., from Detroit, Capt. E. O. SAGE, Detroit.

Minnesota

To Camp Custer, Mich., from Camp Dix, Lieut. R. C. URBAN, Minneapolis.
To Fort McHenry, Md., from Camp Upton, Capt. F. P. MOERSCH, Minneapolis.
To Fort Sheridan, Ill., from Camp Dix, Capts. P. R. HANKEE, Cannon Falls; F. N. BJERKEN, Red Wing.
To Walter Reed General Hospital, D. C., from Pittsburgh, Lieut. H. H. WARNER, St. Paul.

Missouri

To Denver, Colo., from Spartanburg, Lieut. E. J. BUTZKE, Bowling Green.
To Fort Sam Houston, Texas, from Camp Dix, Lieut. L. G. PAWELEK, St. Louis.
To Fort Sheridan, Ill., from Plattsburgh Barracks, Capt. M. L. F. UNDERWOOD, St. Joseph.
To Hampton, Va., from Pig Point, Lieut. E. V. KRING, St. Louis.
To Jefferson Barracks, Mo., from Camp Dix, Major R. E. BYRNS, St. Louis.
To Lincoln, N. Y., from St. Louis, Col. B. J. EDGER, Ja.
To Plattsburg Barracks, N. Y., from Camp Dix, Capt. C. D. MENEFEE, Perry; from Camp Jackson, Lieut. A. C. KIRBY, St. Louis.
To Spartanburg, S. C., from East View, Lieut. B. W. LEWIS, St. Louis.

Montana

To Fort Bayard, N. M., from American Expeditionary Forces, Lieut.-Col. T. B. SCOTT, Butte.
To report to the commanding general, Southern Department, from Camp Grant, Capt. S. ANDROP, Richey.

Nebraska

To Camp Sherman, Ohio, from Camp Bowie, Lieut. C. W. WAY, Wahoo.

Nevada

To Fort D. A. Russell, Wyo., from Camp Dix, Major W. J. CIRCE, Carson City.

New Jersey

To Camp Lewis, Wash., from Camp Dix, Col. W. R. EASTMAN.
To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. J. V. FALISI.
To Fort Slocum, N. Y., from Hoboken, Col. D. BAKER.
To Fox Hills, N. Y., from Cape May, Lieut.-Col. J. T. AYDELOTTE.
To Hampton, Va., Langley Field, as sanitary inspector, from Camp Dix, Major J. S. C. FIELDEN.
To Hoboken, N. J., from Camp Mills, Lieut.-Col. R. H. HUNT, East Orange.
To Newport News, Va., from Camp Dix, Lieut. T. J. KELLY, Newark.
To New York City, from Camp Upton, Capt. P. A. POTTER, East Orange.
To Plattsburg Barracks, N. Y., from Cape May, Lieut.-Col. W. H. ALLEN.
To San Francisco, Calif., from Hoboken, Lieut.-Col. H. G. FORD.
To Walter Reed General Hospital, D. C., from Camp Dix, Lieut.-Col. T. J. LEARY.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Col. P. C. BUTTON; from Hoboken, Col. R. S. PORTER.

New York

To Camp Meade, Md., from Fort Ontario, Col. H. D. THOMASON.
To Carlisle, Pa., from Camp Dix, Major H. E. BABCOCK, Amagansett; from Plattsburg Barracks, Major W. A. CONLON, Central Islip.
To Colonia, N. J., from Camp Dix, Capts. H. S. CAMPBELL, Otto; A. KRIDL, Schenectady.
To Fort Jay, N. J., from Camp Dix, Capt. H. HERSCHBERG, New York.
To Fort McHenry, Md., from Camp Lewis, Capt. E. M. JOHNSON, New York; from Camp Upton, Lieut. T. J. RYAN, New York; from Carlisle, Capt. J. R. HUNTER, New York.
To Fort Porter, N. Y., from Pittsburgh, Lieut. A. R. SHIRLEY, New York.
To Fort Sheridan, Ill., from Hoboken, Lieut. A. LEBENDIG, Rochester.
To Fort Slocum, N. Y., from Camp Dix, Major G. B. BROWN, Saratoga Springs; from Camp Upton, Lieut. A. T. MAYS, Brooklyn.
To Fox Hills, N. Y., from Camp Upton, Lieuts. S. S. FRIEDMAN, New York; F. S. WETHERELL, Syracuse; from Cape May, Capt. J. E. J. KING, New York; Lieuts. F. DAMRAU, Brooklyn; G. C. ANDERSON, S. SILBERT, New York; from Eastview, Capt. W. PANITCH, Troy.
To Garden City, N. Y., as cardiovascular examiner, from Camp Upton, Capt. S. STRUWASSER, Brooklyn.
To Muscle Shoals, Ala., from Hoboken, Lieut. H. W. SCHLESINGER, New York.
To New Haven, Conn., from Camp Dix, Capt. J. E. RAPUZZI, Staten Island.
To Otisville, N. Y., from Camp Dix, Capt. P. M. BOLTON, Buffalo; from Camp Upton, Lieut. H. C. DORSEY, New York.
To Plattsburg Barracks, N. Y., from Camp Dix, Capts. J. H. WATSON, Buffalo; L. J. WARD, Gloversville; Lieuts. G. G. DAVIS, Arcade; A. W. MAHONEY, New York.
To report to the commanding general, Panama Canal Department, from District of Porto Rico, Lieut. H. GOODMAN, New York.
To Walter Reed General Hospital, D. C., from Camp Lee, Lieut. W. F. TOLSON, New York; from Detroit, Capt. G. E. STANBRO, Springville.
To Washington, D. C., Surgeon-General's Office, from Hoboken, Lieut. G. B. THAXTON, New York.
The following order has been revoked: *To Camp Bragg, N. C.*, from Williamsbridge, Lieut. H. T. CARTWRIGHT, New York.

North Carolina

To Plattsburg Barracks, N. Y., from Camp Jackson, Lieut. J. R. LATHAM, Belhaven.

Ohio

To Camp Dodge, Iowa, from Fort Leavenworth, Lieut. W. H. MERRIAM, Mount Eaton.
To Camp Sherman, Ohio, from Camp Dix, Capts. R. B. TATE, Harrison; E. E. LYNCH, Mount Victory.
To Camp Upton, N. Y., base hospital, from Camp Dix, Capt. L. SHIELDS, Xenia.
To Columbus Barracks, Ohio, from Camp Dix, Major J. A. LINK, Springfield.
To Fort Sheridan, Ill., from Camp Dix, Major E. J. GORDON, Columbus.

Oklahoma

To Camp Sherman, Ohio, from Camp Zachary Taylor, Lieut. E. L. YEAKEL, Oklahoma City.
To Fort Riley, from Camp Dix, Capt. R. L. HOLT, Mangum. Base hospital, from Camp Dix, Capt. R. G. SHERWOOD, Ochelata.

Oregon

To Carlisle, Pa., from Camp Dix, Capt. E. D. EVERETT, Lakeview.
To report to the commanding general, Western Department, from Camp Lewis, Lieut. J. E. SHEARER, Cloverdale.

Pennsylvania

To Army Medical School for instruction from Camp Dix, Capt. B. E. WILKINSON, Treverton.
To Camp Dix, N. J., as cardiovascular examiner, from Camp Upton, Lieut. A. LEVY, Philadelphia.
To Camp Jackson, S. C., base hospital, from Camp Dix, Capt. D. BALLOU, Ja., Gibraltar.
To Camp Shelby, Miss., from Camp Jackson, Major G. B. BOYER, Pottsville.
To Camp Sherman, Ohio, from Camp Dix, Major E. J. GORDON, Wyncote.
To Carlisle, Pa., from Camp Dix, Lieuts. R. A. FISHER, Easton; A. I. ROSENBERGER, Meadville; from East View, Major R. J. HENDERSON, Bowmansville.
To Colonia, N. J., from Camp Dix, Capt. W. R. SHOEMAKER, Wilmerding.
To Denver, Colo., from Pittsburgh, Lieut. W. E. GARDNER, Pittsburgh.
To Fort Sheridan, Ill., from Pittsburgh, Lieut.-Col. F. D. KREMERS.
To Fox Hills, N. Y., from Cape May, Lieut.-Col. C. H. FRAZIER, Capt. S. D. INGHAM, Lieuts. M. McCUTCHEON, Philadelphia; W. S. REESE, Scranton.
To Jefferson Barracks, Mo., from Pittsburgh, Capt. R. DUCAT.
To Oteen, N. C., from Camp Dix, Capt. G. R. HARRIS, Ja., Pittsburgh; from Camp Jackson, Capt. A. M. DANNENBERG, Philadelphia.
To Plattsburg Barracks, N. Y., from Camp Dix, Major W. C. HENSYL, Berwick; Capt. J. J. BENDICK, Olyphant.
To Spartanburg, S. C., from Camp Jackson, Lieut. H. A. HOLLAND, Pittsburgh.
To Walter Reed General Hospital, D. C., from Camp Dix, Capt. J. P. MAUS, Philadelphia; from Pittsburgh, Capt. C. A. STAYTON.
The following order has been revoked: *To Governors Island, N. Y.*, from New York, Lieut. J. C. HARDING, Philadelphia.

Rhode Island

The following order has been revoked: *To Muscle Shoals, Ala.*, from Camp Lee, Capt. A. A. WEEDEN, Woonsocket.

South Carolina

To Spartanburg, S. C., from Camp Jackson, Capt. W. S. BURGESS, Sumter.

Tennessee

To Camp Sherman, Ohio, from Camp Zachary Taylor, Major J. L. MORGAN, Memphis.
To Jefferson Barracks, Mo., from Camp Dix, Lieut.-Col. J. B. STEELE, Chattanooga.

Texas

To Camp Sherman, Ohio, from Camp Bowie, Lieut. W. E. CAMPBELL, Cedar Creek.
To Fort Bayard, N. M., from Camp Dix, Major A. M. COFFEY, San Antonio.
To Fort McHenry, Md., from Camp Gordon, Lieut. W. A. LEE, Denison.
To Fort Riley, base hospital, from Detroit, Lieut. O. T. KIRKSEY, Galveston.
To Fort Sam Houston, Texas, base hospital, from Fort Bayard, Capt. W. A. VEE CASH, Abilene.
To Metuchen, N. J., Raritan Arsenal, from Camp Lee, Capt. J. S. WHEELER, Coryell.
To New Haven, Conn., from Camp Jackson, Lieut. J. H. PARK, Ja., Houston.
To New York City, from Camp Dix, Major A. M. COFFEY, San Antonio.
To report to the commanding general, American Expeditionary Forces, Siberia, from Camp Bowie, Major R. E. PARRISH.

Virginia

To Camp Meade, Md., from Camp Custer, Major H. C. MALLORY, Greenbackville.
To Fort Des Moines, Iowa, from Camp Dix, Capt. R. J. EVANS, Ja., Hopewell.
To Fort McHenry, Md., from East View, Lieut. J. W. ROBERTSON, Onancock.
To Fox Hills, N. Y., from Cape May, Major C. C. COLEMAN, Richmond.
To Hampton, Va., from Newport News, Capt. A. B. PAVY.
To Washington, D. C., from Newport News, Lieut.-Col. H. H. BAILY.

West Virginia

To Camp Meade, Md., base hospital, from Army Medical School, Capt. L. A. PETTY, Charleston.
To Hoboken, N. J., from Camp Dix, Major J. J. GOODWILL, Coopers.

Wisconsin

To Fort Riley, from Fort Sheridan, Capt. J. E. McGINNIS, Green Bay.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Lieut.-Col. F. F. BOWMAN, Madison.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg. Gen. T. CLARK (Reserve) authorized to proceed to necessary places in the investigation of Child Hygiene.

Passed Asst. Surg. ROBERT OLESEN, relieved at Montgomery, Ala. Proceed to Washington for instruction preparatory to detail to Milwaukee, Wis.

Passed Asst. Surg. C. L. WILLIAMS, proceed to Washington, D. C., on special temporary duty.

Passed Asst. Surg. C. E. WALLER, relieved from further duty at the Hygienic Laboratory.

Asst. Surg. L. L. WILLIAMS, Jr., relieved at Charleston, S. C. Proceed to Washington, D. C., on special temporary duty.

Asst. Surg. R. E. DYER, proceed to Washington, D. C., on special temporary duty. Relieved at Englewood, N. J.

Asst. Surg. M. V. ZEIGLER, relieved at Brunswick, Ga. Proceed to Washington, D. C., on special temporary duty.

Passed Asst. Surg. I. J. FRISCH (Reserve), relieved at the Bureau of War Risk Insurance. Proceed to the United States Public Health Service Hospital, Waukesha, Wisconsin.

Asst. Surg. H. C. BEST (Reserve) ordered to active duty in the Reserve Corps of the Public Health Service. Proceed to Mount Alto Hospital, Washington, D. C., for duty.

Asst. Surg. M. J. HAHN (Reserve), ordered to active duty in the Reserve Corps of the Public Health Service. Proceed to the Marine Hospital, Boston, Mass., for duty.

Asst. Surg. JOSEPH E. WHEELER (Reserve), ordered to active duty in the Reserve Corps of the Public Health Service. Proceed to the Marine Hospital, St. Louis, Mo., for duty.

Act. Asst. Surg. A. L. BEIER, proceed to Waukesha, Wis., for duty in the U. S. Public Health Service Hospital.

Act. Asst. Surg. W. A. WILSON, proceed to Washington, D. C., for conference.

Intern GEORGE K. ARMEN, proceed to the Marine Hospital, St. Louis, Mo., for duty.

Regional Consultant LOUIS HOUGH, proceed to the States of Missouri, Kansas, Arizona, Wyoming and Colorado to confer with State Health Officers relative to venereal disease control.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—The degree of LL.D. has been conferred by the University of California on President Ray Lyman Wilbur of Stanford University.

Osteopathic Bill Vetoed.—A bill which would grant full physician's license to persons now practicing osteopathy in California was vetoed recently by Governor Stephens.

Sentenced for Illegal Operation.—Dr. Ephraim Northcott, Redwood City, charged with the murder of Miss Inez E. Reed, a United States Army nurse, by an illegal operation, is said to have been found guilty, July 5, and given an indeterminate sentence of from ten years to life imprisonment.

Medical Board Appointments.—Dr. Alfred J. Scott, Los Angeles, has been appointed a member of the state board of medical examiners, succeeding Dr. Harry V. Brown, Los Angeles, term expired.——Dr. Cyrus J. Gaddis, Oakland, has been appointed a member of the state board of medical examiners, to succeed Dr. Ernest Sisson, Oakland, resigned.

Certificates Revoked.—The certificates of Dr. Franklin T. Duncan, San Francisco, and Robert D. Schultz, Marin County, are said to have been revoked at the meeting of the state board of medical examiners at San Francisco, June 26. Dr. Duncan was charged with malpractice and Dr. Schultz was said to have used the designation of Doctor of Medicine, while his was a license to practice only naturapathy.

Cancer "Specialists" Arrested.—Morton M. Winchell, an alleged cancer "specialist" of Los Angeles, according to report, was arrested, May 14, by the state board of medical examiners on the charge of practicing medicine without a license. He pleaded guilty and was fined $250. He is also being held under bail of $11,000 pending a trial for manslaughter in connection with the death of Mrs. Nellie E. Daniels who is reported to have died, May 8, soon after being treated by Winchell for cancer. Another alleged cancer specialist, A. Edwin Mohr of Pasadena, and a house painter, J. O. F. Haase of San Diego, said to be an ex-convict, were arrested recently for practicing medicine without a license.

COLORADO

Personal.—Dr. John A. Wenk has succeeded Dr. J. H. Hurley as chief resident physician at the Denver County Hospital.——Rea P. McGee, Major, M. C., U. S. Army, Denver, on duty with the A. E. F. in France, has been promoted to the rank of lieutenant-colonel, and has been twice cited for bravery.

Eye, Ear and Throat Men to Meet.—The Colorado Congress of Ophthalmology and Oto-Laryngology will be held in Denver, August 4 and 5, under the auspices of the Colorado Ophthalmological and Colorado Oto-Laryngological societies. The meeting will be held in the Denver County Society Assembly Room in the Metropolitan Building, and Dr. Melville Black, Denver, will preside.

DISTRICT OF COLUMBIA

Graduation Exercises.—Georgetown University School of Medicine and the dental department of the university held their annual graduation exercises, June 28.

Raise Money for New Home.—The Medical Society of the District of Columbia has already raised more than $50,000 of the $90,000 required for the erection of a building for the organization on M Street N.W., near Seventeenth Street.

Personal.—Dr. William J. French, Washington, has been awarded the Legion of Honor by the French government, in appreciation of the work done by Dr. French in each of the children's bureaus which he established as a war measure in Paris.——Melville B. Fischer, Washington, who has been chief consultant at Embarkation Camp No. 2, St. Nazaire, France, has been honorably discharged from the service.

Enlargement of Walter Reed Hospital.—Merritte W. Ireland, Major-General, M. C., U. S. Army, Surgeon-General of the Army, appeared before the senate military committee recently and made an urgent appeal for the appropriation of funds with which to purchase about 26 acres of land for the future home of the Army Medical School, Surgeon-General's Library, Army Medical Museum, thus centering all local activities at Walter Reed General Hospital. He estimated that eventually it would be necessary to increase the accommodation of the hospital to about 1,000 beds and have the institution become an establishment for the treatment of special and difficult cases.

FLORIDA

Health Board President Dead.—Honorable Edward M. Hendry, Tampa, former president of the Florida State Board of Health, aged 51, died at the home of his sister in Fort Myers, May 28.

Personal.—Dr. Van H. Gwinn has been appointed acting state health officer, succeeding Dr. William H. Cox, removed; both physicians are of Jacksonville. Dr. Gwinn will serve until the arrival of Ralph N. Greene, Major, M. C., U. S. Army, Chattahoochee, newly appointed state health officer.

Tax Bill Vetoed.—May 28, the governor vetoed an act passed by the legislature to amend section 1137 of the general status, providing for a state board of health tax. The causes for veto as stated are: that the bill does not provide sufficient revenue to meet the regular expense of the board, that the language of the act may limit the use of the funds derived so as to embarass the work of the board and, furthermore, the governor does not believe the revenue to be derived under the terms of the bill will be sufficient for the maintenance and support of the work of the board.

GEORGIA

Venereal Clinic to Be Established.—At a recent meeting of the city council of Macon, it was voted to arrange to finance a venereal disease clinic at the City Hospital, which will be in charge of the hospital commission.

Personal.—Dr. William F. Brunner, health officer of Savannah for twenty years, was presented by the municipality, June 18, with a silver water service.——Dr. George

S. Murray, Columbus, has been demobilized from the Royal Army Medical Corps.——Charles A. Downey, health officer and food inspector of Waycross, has resigned and has been succeeded by Major John R. Scully, who has recently been discharged from the military service.——Dr. James C. Gower has been elected secretary-treasurer of the Park View Hospital, Gainesville, succeeding Dr. Charles W. Larrabee, resigned.

Medical Faculty Changes.—The following members of the teaching staff of the medical department of the University of Georgia, Augusta, have been promoted as follows: Joseph H. Ackermann, assistant professor of obstetrics; Guy T. Bernard, assistant professor of surgery; Charles I. Bryans, associate in ophthalmology, otology, rhinology and laryngology; Asbury Hill, associate in genito-urinary diseases; William J. Cranston, associate in medicine; Robert L. Rhodes, associate in surgery; J. R. Robertson, associate in genito-urinary diseases, and William H. Roberts, instructor in genito-urinary diseases.

ILLINOIS

Sanitary Inspector Returns.—Charles Backus Ball, chief sanitary inspector of the Chicago Department of Health and lecturer for the Army Educational Commission in France, returned to Chicago, July 10.

Illegal Practitioner Arrested.—Mary Zahinsky of 1626 South Morgan Street, Chicago, was arrested by the Illinois Department of Registration and Education and fined $25 for violation of the medical practice act.

Personal.—Dr. Hartwell C. Howard, Champaign, who was graduated from Starling Medical College, Columbus, in 1850, and has practiced continuously since that time in Champaign, celebrated his ninetieth birthday anniversary, July 12.——Harry D. Orr, Col., M. C., U. S. Army, Chicago, chief surgeon of the Thirty-Third Division, received his discharge at Camp Grant, last week.——Dr. George W. Cusick has been appointed local surgeon for the Illinois Central Railroad at Freeport.

Graduate School Lectures.—The fifth lecture of the graduate summer quarter in medical science at the University of Illinois, Chicago, was delivered, July 11, by Dr. D. Carl Huber, professor of anatomy in the University of Michigan, Ann Arbor, on "Nerve Transplantation."——The sixth lecture of the course was delivered, July 16, by Dr. Charles C. Bass, professor of experimental medicine in Tulane University, New Orleans, on "Malaria with a Special Reference to Its Control."

INDIANA

Telephone Consultations No Longer Free.—Columbus doctors have added 50 cents to the price of all professional calls. Conversations on the telephone of a professional nature will also be charged.

Health Association Organized.—The Public Health Association of South Bend was organized, June 27, and Dan Pyle was elected president, Dr. Walter H. Baker, vice president, Dr. Alta K. Bpram, secretary, and Mr. Walter Bloomfield, treasurer.

Venereal Clinic to Open.—The city council of Newcastle, at a special session, July 1, voted to cooperate with Henry County in the establishment of a free clinic for venereal disease. Appropriations of $500 were made by the county council and city council.

Hospital Items.—Plans for a new Wabash County hospital, to be erected at Wabash, at an approximate cost of $80,000, have been presented for approval by the state board of charities.——There is to be a new tuberculosis sanatorium in Wayne County, located about seven miles south of Richmond.

State Board Loses Suit.—In the Knox Circuit Court, July 5, Judge Thomas B. Coulter found for the defendant in the suit of the state board of medical registration and examination against Dr. George F. Smith, Bicknell, the verdict of the court being "not guilty." The charges against Dr. Smith were that he induced the state board to grant a certificate for license by fraud in that he did not have sufficient credits to entitle him to a certificate for preliminary high school work and that he practiced fraud and deception.

Charges Against Physicians.—The coroner of Wayne County is said to have bound Dr. Frederick W. Krueger, Richmond, over to the grand jury on the charge of alleged criminal neglect by throwing a two-day-old infant which he believed to be a monstrosity down a 60-foot embankment on the city dump. The child was found and lived for twelve hours.——Drs. Charles E. Burris, Harrison B. Hulse, Alonzo S. Neely, Edgar M. Outland, Calvin R. Atkins, Indianapolis, Walter M. Byers, Shirley, William McQueen, Quincy, and Lewis L. Williams, Brazil, are said to have been indicted by the Marions County grand jury on the charge of the illegal sale of intoxicating liquors.

Tuberculosis Notes.—The headquarters of the Mississippi Valley regional secretary of the National Tuberculosis Association are to be established in Indianapolis. Arthur J. Strawson, who was executive secretary of the Indiana Tuberculosis Association for two years prior to March 1, 1918, has been appointed regional secretary, and he will have charge of the new district headquarters which will also be the headquarters of the Mississippi Valley conference on tuberculosis. The new regional secretary will have jurisdiction over the states of Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio and Wisconsin.——The Adams County commissioners, at their July session at Decatur, unanimously indorsed the proposition of joining with the counties of Wells, Jay, Blackford and Huntington, or any of these counties in the establishment of a sanatorium for the treatment of tuberculosis.

MARYLAND

Personal.—Dr. J. Carroll Monmonier, who recently served as major in the Medical Corps with the American Expeditionary Forces, has returned to Catonsville to resume practice.——Dr. John S. Green, Jr., Long Green, who was recently discharged from the U. S. Navy, has opened an office at Towson.

MASSACHUSETTS

Hospitals Reopened.—Peter Bent Brigham and the Elks Reconstruction hospitals in which U. S. Army Base Hospital No. 10 has been located, reopened, July 1, for the treatment of War Risk Insurance cases, under the direction of Major Ezra K. Sprague, Portland, Me. These hospitals will have accommodation for 800 patients.

Personal.—Dr. Sumner C. Brooks of the Department of Tropical Medicine in Harvard University has been appointed associate professor of physiology and biochemistry at Bryn Mawr College.——Dr. Emily C. MacLeod, Boston, sailed for Serbia from New York to assist in forming hospital organizations in Serbia.——Governor Coolidge has nominated Dr. Joseph Armand Bedard, Lynn, for medical examiner (coroner) of Essex County, to succeed Dr. Joseph G. Pinkham, resigned.

MISSOURI

Personal.—Dr. Frederick A. Baldwin, Columbia, who has been in charge of the Department of Preventive Medicine of the Missouri State University during the absence of Dr. Mazyck P. Ravenel, in army service, has been appointed pathologist to Wesley Hospital, Kansas City.

State Board Laboratory Transferred.—The Missouri State Board of Health has formally transferred to the Department of Preventive Medicine of the University of Missouri the laboratory works formerly conducted by the department at Jefferson City, and Dr. Mazyck P. Ravenel is now the authorized bacteriologist for the board. Under the new arrangements all diagnosis of typhoid fever, tuberculosis, diphtheria, the examination of water and the like will be carried on at the state university, and treatment for hydrophobia will be administered at the Parker Memorial Hospital at the institution.

MINNESOTA

Hospital Items.—The Oliver Iron Mining Company is preparing to erect a hospital to cost $270,000 in Hibbing.——Physicians of Sandstone have converted the Parish residence into a modern infirmary.

Tribute to Society Members.—A banquet was given at the Minnesota Club, St. Paul, June 21, by the Ramsey County Medical Society to its members who have been in the medical service of the United States or Allies. Of the membership of the society, ninety entered the service and of these, eighty-eight returned. Lieuts. Harry C. McIntosh and Otto L. Winter, both of St. Paul, died in service.

Public Health Associations Organize.—The Isanti County Public Health Association was organized at Cambridge, June 21. Dr. Charles Swenson Braham was elected president.——The Blue Earth County Health Association was organized in Mankato, June 21, and Dr. Helen Hughes, Hirlscher, was elected president.——The Beltrami County Public Health Association was organized at Bemidji, May 29, and Dr. Edwin H. Smith was elected vice president.

Personal.—Drs. S. Marx White, Axel E. Hedback, Minneapolis, and Oscar W. Holcomb, St. Paul, have been appointed members of the state board of health.——L. P. Wolff, St. Paul, has been reappointed a member of the state board of health.——Dr. Henry L. Williams, Minneapolis, has resumed his duties as chief medical officer of the ninth district board of vocational education of soldiers and sailors and marines. ——Dr. Henry M. Bracken, executive officer and secretary of the state board of health, St. Paul, was presented with a brass desk set by the women employees of the health office. Dr. Bracken retired from his official position with the state board of health, July 8, to accept a position in the United States Public Health Service.——Walter R. Ramsey, Major, M. C., U. S. Army, Minneapolis, has been awarded a gold medal by the French government for his services to French war refugees in northern France.——Dr. Wenceslaus J. Hovorka, St. Paul, is on trial charged with the illegal selling of narcotic drugs.——Dr. Joseph M. A. Gravelle, Minneapolis, charged with the murder of his wife in June, was found insane by a commission of physicians, June 23, and ordered to be committed to the Hospital for Dangerously Insane, St. Peter.——Dr. Dennis B. Rice, assistant superintendent of the St. Paul City Hospital, has resigned and has been succeeded by Dr. Charles H. Pelton, Bucyrus, Ohio.—— Dr. Francis H. Gambell, Thief River Falls, was given a farewell banquet, June 5. Dr. Gambell has started for Sibera, where he expects to remain two years in Red Cross work. ——Dr. William B. Wright, Jr., St. Paul, has resumed charge of the Rood Hospital interest in the Mesaba range as superintendent of hospitals.

MISSOURI

Occupational Therapy.—The first issue of the *Bulletin of the St. Louis School of Occupational Therapy* announces that instruction in occupational therapy is being systematically conducted in St. Louis. The course will prepare students to teach occupational therapy to physically and mentally handicapped, and convalescents in public and private institutions, and to meet the demand of the government for reconstruction aides in military hospitals so long as that need exists. The next class opens, September 16, and includes sixteen weeks of craft work and twelve weeks of hospital practice. The cooperation of the Barnes Hospital, the City Hospital and the City Sanatorium offers ample opportunity for practical instruction.

Child Welfare Clinics.—Through the generosity of several public spirited citizens of St. Louis, eight clinics will be established, about September 1, to promote the welfare of infants and children of preschool age. The plan contemplates prenatal work, instruction in the care of the newly born, and watchful supervision until school age. The funds for the first year's work were contributed by private donations, but will be administered under the supervision of the director of public welfare until April, 1920, when the city will take charge of the work and continue it as a municipal undertaking. The donors are Benjamin Gretz, Mrs. Lily Busch, Benjamin and Marcus Harris, Mrs. J. Louis Swarts, William T. Hill, Mr. and Mrs. George Warren Brown, Mrs. Ames Cushman, Mrs. Lon O. Hocker, Mrs. A. Brueggemann and an anonymous donor. The funds will be administered under the direction of Dr. Borden S. Veeder of the Children's Hospital; Mr. John Schmoll, director of public health; Dr. C. H. Shutt, hospital commissioner, and Miss Lyda M. Anderson, chief of the Municipal Nurse's Corps.

NEW JERSEY

State Society Meeting.—The fifty-third annual convention of the Medical Society of New Jersey was held at Spring Lake Beach, June 24 and 25, and the following officers were elected: president, Dr. Gordon K. Dickinson, Jersey City; vice presidents, Drs. Philander A. Harris, Paterson, Henry B. Costill, Trenton, and James Hunter, Jr., Westville; correspondent secretary, Dr. Harry A. Stout, Wenonah; recording secretary, Dr. William J. Chandler, South Orange (reelected), and treasurer, Dr. Archibald Mercer, Newark. Dr. Alexander Marcy, Riverton, offered a resolution appropriating $1,000 for a prize essay on "State Social Insurance," open to all medical men of the country.

NEW YORK

Venereal Disease Clinics.—The board of health of Port Chester has decided that a venereal disease clinic should be opened in connection with the child welfare station.—— Syracuse has opened a venereal disease hospital in charge of Dr. Henry A. MacGruer. This building will also be used as a detention hospital.——A venereal disease clinic has been opened in Batavia under the direction of Dr. Frederick D. Carr.

Addition to Letchworth Village.—Governor Smith laid the cornerstone for new dormitories at Letchworth Village, near Thiels, Rockland County, July 9. The new dormitories and other buildings will provide for 840 additional patients. At the last session of the legislature $880,000 was voted for new construction at the village to make provision for the large number of mental defectives who are without proper institutional care. Dr. Pearce Bailey also made an address in which he urged an extension of the research work at the village, and stated that as a nation we were far behind in taking active measures to handle the problem of the mental defective.

Coordination of Health Activities.—At the meeting held in Utica, June 16, representatives of the committee of hygiene of the board of education; the child welfare committee; home agencies for dependent children; Utica Dispensary; Camp Healthmore; the public welfare committee; Junior League and Day Nursery; the American Red Cross; Associated Charities; Utica Chamber of Commerce and county tuberculosis committee voted to organize a health coordination committee of from five to twelve members. The purpose of this committee is to coordinate the health activities in the community, to promote public health education, to support approved health measures, and to cooperate with the local health authorities in the direction of public health and in meeting emergencies relative to public health.

Personal.—Dr. William G. Bissell, bacteriologist of the Buffalo Health Department, was elected president of the State Sanitary Officers' Association at the annual meeting held in Saratoga, June 25.——Fred M. Meader, New York City, director of the division of communicable disease of the state department of health, has returned from France and has resumed his work. While abroad Dr. Meader served as epidemiologist at Bordeaux and London.——Dr. Linsly R. Williams, Albany, formerly deputy commissioner of the state board of health, returned from his service abroad in June. ——Dr. Paul B. Brooks, Albany, acting director of the division of communicable disease in the state department of health, has been designated as chairman of the special committee on drug addiction of the Medical Society of the State of New York.——Dr. Henry L. K. Shaw, Albany, has been appointed a member of the advisory child welfare board of the children's bureau of the federal department of labor.—— Dr. Joseph E. Clark, Utica, sanitary supervisor of Herkimer, Madison and Oneida counties, is at St. Luke's Hospital, Utica, convalescing after a surgical operation.

New York City

Personal.—William H. Haskin, Lieut.-Col., M. C., U. S. Army, who has been on duty for two years at the U. S. Military Academy, West Point, was discharged from service, July 1, and will return to his practice, about September 1. ——Dr. Pearce Bailey has been appointed chairman of the State Commission for Mental Defectives.

Floating Hospital Opens Season.—The Floating Hospital, which takes sick babies and mothers to the Seaside Home, New Dorp, Staten Island, made its first trip, July 7. The Floating Hospital usually carries about 50,000 babies and mothers during the months of July and August. This year a service of fifty beds has been added, and the night service will be continued whatever the weather. An anonymous donor has promised the Seaside Hospital $50,000 toward a much needed nurses' home, provided the trustees can raise $150,000.

Physicians Neglect to Register.—Commissioner Herrick of the state department of narcotic drug control has notified 9,000 physicians, dentists and veterinarians who prescribe or administer habit-forming drugs that they must register or submit to criminal prosecution. July 1, only 8,000 dispensers out of a total of 17,000 had complied with the law. Commissioner Herrick announces that proceedings will be begun against evaders immediately. It is pointed out that two courses of action are open to the department. Licenses may be revoked or evaders may be prosecuted as violators of the public health law.

Greenhut Hospital Closes.—The Greenhut Military Hospital, known as Debarkation Hospital No. 3, was closed, July 15. The Greenhut Hospital has been the largest military hospital under one roof in the world and has received and evacuated more cases in a shorter time than any other

institution of its kind in the United States. Since the first consignment of wounded arrived from overseas, Nov. 23, 1918, 36,878 patients have entered the institution and have later been discharged or evacuated to hospitals nearer their homes. The record number received in one day was 2,235, and the largest number discharged was 1,638.

Appointments to Staff of Rockefeller Institute.—The board of scientific directors of The Rockefeller Institute for Medical Research announces the following promotions and appointments: Dr. Harold L. Amoss, hitherto an associate in pathology and bacteriology, has been made an associate member; Dr. Oswald T. Avery, hitherto an associate in medicine, has been made an associate member. The following have been made assistants: Miss Clara J. Lynch (pathology and bacteriology) and Dr. Waro Nakahara (pathology and bacteriology). The following new appointments are announced: Drs. Homer F. Swift, associate member in medicine; Francis G. Blake, associate in medicine; Raymond G. Hussey, associate in pathology and bacteriology; J. Harold Austin, assistant in medicine and assistant resident physician; Albert H. Ebeling, assistant in experimental surgery; Ferdinand H. Haessler, assistant in pathology and bacteriology; Thorsten Ingvaldsen, assistant in chemistry; Charles W. Barrier, fellow in pathology and bacteriology; J. Jay Keegan, fellow in pathology and bacteriology; Philip D. McMaster, fellow in pathology and bacteriology. Dr. Alphonse R. Dochez, hitherto an associate member in medicine, has accepted an appointment as associate professor of medicine in the medical department of Johns Hopkins University. Dr. Arthur L. Meyer, hitherto an associate in physiology and pharmacology, has accepted an appointment as associate in physiology in the school of hygiene and public health, Johns Hopkins University.

To Make New York Medical Capital.—An organization, to be known as the New York Association for the Advancement of Medical Education and Medical Science, has adopted a constitution and by-laws and has filed an application for incorporation with the secretary of state at Albany. The project has as its aim the making of New York City a great medical center which shall fill the place formerly occupied by Vienna and Berlin. The constitution of the association names as the four prime objects to be obtained: (1) to improve and amplify the methods of graduate and undergraduate teaching; (2) to perfect plans for utilizing the vast clinical material of the city for teaching purposes and to make use of teaching talent now unemployed; (3) to bring about a working affiliation of the medical schools, hospitals and laboratories, as well as the public health facilities of the city to the end that the best interests of medical education may be conserved; (4) to initiate the establishment of a medical education foundation in New York City whereby funds may be secured to meet the financial requirements of all forms of medical education and investigation. There will be two classes of membership in the organization, one a general membership, including all physicians in good standing, teachers of auxiliary sciences, and investigators of problems related to medicine, the other a corporate membership of medical teachers and medical men with hospital appointments or affiliations. The corporate membership is limited by the constitution to not more than 150. A nation-wide campaign to raise $50,000,000 with which to finance the project will be started immediately. The officers of the association are: president, Dr. Wendell C. Phillips; first vice president, Dr. George David Stewart; second vice president, Dr. Glentworth R. Butler, Brooklyn; secretary, Dr. Haven Emerson; treasurer, Dr. Arthur F. Chace; trustees, Col. Charles H. Peck, Dr. William Francis Campbell, Brooklyn, Dr. John A. Hartwell, Dr. Frederick Tilney, Dr. Otto von Huffman, Dr. Adrian V. Lambert, Dr. Samuel Brown, Dr. James Alexander Miller and Dr. George W. Kosmak, all of New York City.

PENNSYLVANIA

Licenses Revoked.—The State Board of Medical Education and Licensure, June 27, is said to have revoked the licenses of seven medical men for violation of the Harrison Narcotic Law; to have suspended five physicians and to have revoked for three months the license of another physician who is at present serving a sentence for seditious utterances. Those whose licenses were revoked are: Drs. Davis A. Dean, John F. Fox and Oscar Brun, Pittsburgh; John C. Bateson, Scranton; Thomas R. Francis, Connellsville; William H. Rote, Williamsport, and Henry L. Lewis, Erie. Those whose licenses were suspended are: Drs. William P. Buck, Elizabethtown; Henry A. Zeigler, York; George R. Welchans, Lancaster; Charles G. Hayes, Montoursville, and Walter W. Senn, Williamsport.

"Swat-the-Fly" Campaign.—The war against the house fly is to be carried on more earnestly this year, according to Dr. William C. Miller, Harrisburg, chief of the division of public education of the state department of health, who hopes to reach every schoolchild and housewife, every store owner and employee through the educational drive. Contests in fly-swatting have been organized among the schoolchildren of Harrisburg, and medals have been awarded by the department to the pupils with the largest crops of the obnoxious insects. Dr. Miller is under instructions from Dr. Edward Martin, state commissioner of health, to use the county fairs and the summer schools, the churches and Sunday schools in promoting this health propaganda. Boy Scouts and social workers are both serving, the latter principally in teaching mothers how to make "kiddie coops," and to manufacture simple contrivances to prevent the breeding of flies. According to statistics compiled by the state health department, every year throughout Pennsylvania, the mortality rate among infants who die from intestinal diseases begins to increase in May coincident with the first appearance of the house fly. Month by month, as the flies multiply the death rate from these diseases rises proportionately.

Philadelphia

Personal.—Daniel M. Hoyt, Lieut.-Col., M. C., U. S. Army, recently in command of Base Hospital Unit No. 55, which operated as a part of the Justice Hospital group at Toul, France, has returned.——Morris C. Thrush, chief of the surgical service of the military district near Chateauvaux, France, returned on the *Leviathan*, July 5.——Joseph D. Purvis, Butler, formerly chief of the Section of Hospital Administration of the South Intermediate Zone in France, has succeeded Dr. Clarence V. Clemmer as chief director of the Hahnemann Medical College and Hospital.

CANADA

Deputy Minister of Health.—The Federal Department of Health is in process of organization. It is expected that the deputy minister of health will be Dr. John A. Amyot, professor of public health in the University of Toronto, but no decision has as yet been arrived at.

Hospital Units Arrive Home.—The base hospitals of the University of Toronto, Queen's University, Kingston, and Dalhousie University, Halifax, have arrived in Canada. Only four of the original medical men on the staff of the Toronto Hospital remained with the unit until its return. Col. William B. Hendry, Toronto, was the officer commanding.

Personal.—Dr. Wilfrid Grenfell, C. M. G., is in Ottawa from Labrador.——Dr. Thomas B. Richardson, pension board, Ottawa, is in Toronto for a month's work at the local branch of the board.——Dr. Charles J. C. O. Hastings, Toronto, M. O. H., states that there were only three deaths from typhoid fever in Toronto for the first six months of the present year, and these were all contracted outside of the city. There were eighteen cases in all.—— Dr. John A. McCollum has arrived in Toronto from overseas.—— D., John G. Adami, Montreal, Strathcona professor of pathology and bacteriology in McGill University, since 1892, has accepted the vice chancellorship of the University of Liverpool, England.

GENERAL

Change of Meeting Date.—The date of the meeting of the American Academy of Ophthalmology and Oto-Laryngology in Cleveland, which was to have been held September 1, 2 and 3, has been changed to October 16 to 18.

Consolidation of Health Establishments.—The Senate amended the sundry civil appropriations bill inserting a provision calling on the members of the War, Navy, Interior, Treasury and Agricultural departments to report to Congress, before December 1, a plan for the consolidation of the various health divisions and bureaus of the government.

Specialists Elect Officers.—At the annual meeting of the Kansas City Eye, Ear, Nose and Throat Club, the following officers were elected: president, Dr. Hal Foster, Kansas City; vice presidents, Drs. John D. Pifer, Joplin, and Theodore S. Blakesley, Kansas City, and secretary, Dr. J. Halcombe Laning, Kansas City. The membership of the Club includes physicians of Arkansas, Kansas, Oklahoma and Missouri. The next meeting will be held October 16.

Specialists Hold Meeting.—At the annual meeting of the American Laryngological, Rhinological and Otological

Society, held in Atlantic City, May, 1919, the following officers were elected: president, Dr. Harris P. Mosher, Marblehead, Mass.; vice president, eastern section, Dr. Wells P. Eagleton, Newark, N. J., southern section, Dr. Joseph B. Greene, Asheville, N. C., middle section, Dr. Samuel Iglauer, Cincinnati, mid-western section, Dr. Frank L. Dennis, Colorado Springs, and western section, Dr. H. Bert Ellis, Los Angeles; secretary, Dr. William H. Hasking, New York City, and treasurer, Dr. Ewing W. Day, Pittsburgh.

Cressy Returns to Serbia.—Dr. William H. Cressy, Grand Rapids, Mich., who has spent two and a half years in the Serbian Service during the war and was commissioned Major in the Royal Serbian Army, has returned to Serbia as director of the medical work of the Serbian Relief Committee. This committee is sending a commission of nineteen physicians and nurses to Southern Serbia under the personal direction of Dr. Cressy. They will be placed at strategic points in their respective districts and will do dispensary work and will conduct a general health campaign. The committee expects to dispatch another medical unit as soon as necessary funds and personnel may be obtained.

Bequests and Donations.—The following bequests and donations have recently been announced:

Jefferson Medical College, $5,000 for a free scholarship; Rush Hospital, Philadelphia, $5,000 for free beds; Pennsylvania Training School for the Feeble Minded, Elwyn, $2,000 by the will of Dr. J. Ewing Mears, Philadelphia.

Hudson Hospital, Columbia, N. Y., and Brooklyn Home for Consumptives, each $10,000 and Long Island College Hospital, for hospital purposes, $5,000 by the will of Warren Snyder.

Cooper Hospital, Camden, N. J., for the establishment of five beds in memory of his father, his mother, his two sisters and himself, $30,000; Camden Home for Friendless Children, and West Jersey Homeopathic Hospital, Camden, each $5,000 by the will of Oliver D. Wood, Camden.

Adenoids.—As a result of an extensive survey among population centers conducted by the United States Public Health Service it is announced that adenoids are handicapping more than 10 per cent. of American children, and considerable proportion of the defects revealed in medical examinations conducted by draft boards indicated that a large proportion of the defects discovered were unquestionably due to the failure of the parents to pay attention to the physical defects in young children. The Public Health Service has prepared a booklet on "Adenoids," for distribution to parents and school authorities, which tells how the first appearance of adenoids may be detected and points out the means of relief of this condition.

A New Ruling on Narcotic Drugs.—In accordance with the decision of the United States Supreme Court in the Doremus case (THE JOURNAL, June 7, 1919, p. 1698), the commissioner of internal revenue in Treasury Decision 2879 has revoked the ruling made in Treasury Decision 2200, May 11, 1915, permitting a physician to dispense or prescribe narcotic drugs in a quantity more than is necessary to meet the immediate needs of a patient. The old ruling permitted a doctor to prescribe a sufficient amount of narcotic drugs to supply the patient for a reasonable length of time. The supreme court holds that an order for morphin issued to an habitual user thereof, not in the course of professional treatment in an attempted cure of the habit, but for the purpose of providing the user with morphin sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the act. The commissioner therefore rules that prescriptions for narcotic drugs in a quantity more than necessary to meet the immediate needs of a patient are violations of the law and that the writer of such a prescription, the druggist who fills it and the person obtaining drugs thereunder are all liable regardless of the dosage indicated by the prescription. This means that under the ruling of the federal supreme court physicians prescribing narcotic drugs are permitted to prescribe only such amounts as are necessary for the immediate needs of the patient.

FOREIGN

Public Monument to Zaragosa Physician.—The professors and students of the Zaragoza Medical Faculty have recently erected in the grounds of the Hospital Clinico a monument with bust of the late Dr. Fairén, professor of hygiene and otorhinolaryngology, dean of the faculty and beloved chief of the hospital.

Study of Social Medicine in Spain.—The *Revista Española de Medicina y Cirugía* describes the founding at Madrid of the Instituto de Medicina Social for the study and teaching of questions affecting the practice of medicine from the social or sociologic standpoints. One of the aims of the institute is to incorporate its principle and methods in the direct administration of public affairs.

Gold Medal to American Red Cross in Italy.—The *Policlinico* relates that an impressive scene occurred at the capitol at Rome when the mayor of Rome, il sindaco Apolloni, presented the officials of the American Red Cross with the gold medal. The ambassador of the United States, Thomas Nelson Page, and the chief of the American Red Cross in Italy, Colonel Bartlett, replied on behalf of the Red Cross to the speech of presentation.

Catalan Medical Congresses.—Our Spanish exchanges mention that the Third Congress of Catalan-Speaking Physicians was to be held the last week in June at Tarragona in eastern Spain. An attendance of about 300 was anticipated. The subjects appointed for discussion are the "Physiopathology of the Abdominal Sympathetic System" and "Treatment of Septicemias." The leading addresses on these subjects were printed and distributed beforehand. Catalan is related to the Provençal of France across the border.

Bassini Reaches the Age Limit.—Prof. E. Bassini retires from the chair of surgery at the University of Padua, having reached his seventy-fifth year. Prof. A. Preti, director of the Bassini Institute for Treatment of Hernia in those unable to pay, has published a short history of the institution as a tribute to Professor Bassini, and subscriptions are being collected to put the institution on a more stable footing. Over 21,000 lire have already been collected. The subscriptions are sent directly to the Istituto Bassini, via Ricordi 1, Milan. Bassini is a senator of the realm.

Honors for Spanish Medical Journals.—The exposition in connection with the recent First National Medical Congress, held at Madrid, awarded a *diploma de honor* to the recently founded medical journals *Progresos de la Clinica* and *Plus Ultra*, and diplomas with gold medal to the *Revista de Medicina y Cirugía Prácticas*, now in its forty-third year, and to the *Medicina Ibera* which was founded about four years ago with an exceptionally full abstract department. All of these are indexed and reviewed regularly in our Foreign Current Literature Department. The *Siglo Médico* was *hors concours* as its editor was on the organizing board of the congress. Two other medals were awarded, one to a journal devoted to physical education, the other to one just founded for social medicine.

For Aged and Infirm Physicians of France.—Paris has an institution called the Maison du Médecin, a medical social gathering place which was founded in 1908, and in 1912 was listed by the state as an *institution d'utilité publique* and granted a subsidy. The social seat is on the rue d'Astorg, Paris, but there is a country home connected with it, a large modern château at Valenton, with twenty-five rooms and large grounds where aged and infirm physicians are given a home at low rates (800 to 1,500 francs—$150-$300). The prevailing high prices have rendered necessary an appeal for more funds, and the Maison du Médecin, in the French medical press, is asking for contributions: $200 makes one a *membre bienfaiteur*, $40 a *membre perpétuel*, and $20 a *membre donateur*. Address all contributions to the Maison du Médecin, 9 rue d'Astorg, Paris.

Graduate Course on Heart Diseases.—The dean of the Istituti Clinici at Milan, Senator Mangiagalli, called on Professor Mariani of the University of Genoa, director of the journal, *Le Malattie del Cuore*, to deliver a course of lectures on the present status of our knowledge of heart disease. This course on cardiology proved extremely popular as Mariani discussed treatment in particular after having shown the various forms of heart insufficiency that may be encountered. He emphasized especially the important aid that may be obtained from the Swedish system of training the heart by passive exercise in the graver cases and against progressive resistance in the others, thus strengthening the heart muscle and accumulating reserve force. A letter recently received from Italy extols the advantages of such courses on cardiology to be held at different points to enable practitioners at large to keep pace with the progress that has been realized of late in the knowledge and treatment of valvular and other affections of the circulatory apparatus. Mariani's clinic at Genoa is known as the Refugium Cordis.

Durante's Seventy-Fifth Birthday.—Having reached the age limit, Prof. Francesco Durante retires from the chair of surgery at the University of Rome but retains his seat in the senate. His last lecture was crowded with his present and former pupils and friends, many of his pupils now professors in other universities. He devoted his last address to suggestions for improving the medical curriculum and plan of

teaching. With Guido Baccelli, Durante founded the *Policlinico*, twenty-six years ago, and has always kept his interest in the surgical section, which was his special charge while Baccelli guided the medical section. Both at first combined their efforts in the weekly practical section, now carried on by Prof. V. Ascoli. Durante was always called on to be at least honorary president at nearly every international medical and surgical gathering. The *Policlinico* gives an illustration of the handsome bronze bust, showing the master with his flowing beard, presented to the clinic by his former aids and pupils. The pupils of his last class presented him also with a parchment roll with their signatures and expressed intense gratitude for the way in which he had made it possible for them to complete their training despite their regular military service. Durante's name is connected particularly with progress in treatment of surgical tuberculosis, in the surgery of the skull and brain, and in the science of tumors. His iodin-iodid solution is in constant use.

LATIN AMERICA

Deaths in the Profession.—Dr. E. Massini, a leading obstetrician and practitioner of Rosario, Argentina, vice president of the Liga de la tuberculosis and director of one of its dispensaries as also of the training school for nurses and for midwives.

Typhus in Valparaiso.—It is reported from Chile that there have occurred a number of deaths at Valparaiso caused by the epidemic of typhus fever, which has assumed this year an extraordinary virulence. The sanitary authorities have adopted all kinds of precautions to prevent its spread to other places.

Tribute to Dr. Núñez.—The *Sociedad de Estudios Clinicos* held recently an extraordinary session to celebrate the fiftieth anniversary of the graduation of Dr. Emiliano Núñez, the director of the Hospital *Nuestra Señora de las Mercedes*, since its foundation. A gold medal and a diploma were presented to Dr. Núñez on this occasion at Havana.

MADRID LETTER

MADRID, May 10, 1919.

The First National Congress of Medicine in Spain

The First National Congress of Medicine was a great success, the credit belonging to the secretary-general, Dr. Florestán Aguilar, a true Yankee in Spain and a man who has given to his specialty, odontology, an importance not hitherto granted it. The congress was to have been convened November, 1918, but had to be postponed on account of the influenza epidemic.

With all the magnificence that behooves the most splendid European Court, the King of Spain opened the Congress in the Teatro Real. The rostrum was occupied by the Secretary of the Interior, the Mayor of Madrid, the president of the Central University (of Madrid), Dr. Carracido, and the president of the Congress, Dr. Gómez Ocaña, who were surrounded by other prominent scientific personalities. In the royal box were the Queen Dowager and the King's aunt, the Infanta Doña Isabel. Four thousand physicians were in attendance at the opening.

SPANISH NEEDS IN SANITATION

The president of the Congress, Dr. Gómez Ocaña, professor of physiology of the School of Medicine of Madrid, read a splendid address. He said that the need for the Congress was evident from the vast amount of papers, reports, and lectures, which had congested so much the sessions devoted to medicine at the last three meetings held by the Spanish Association for the Progress of Science. The Congress had two purposes: 1. A presentation of the sum of scientific knowledge and its progress and the aspirations of the medical profession of Spain. 2. To obtain a greater solidarity and a wider sphere of action in order to form a great association of the members of the profession in Spain. Other congresses will be held in the different provincial capitals of Spain so that all suspicion of centralization may vanish. He mentioned that the mortality rate of Spain is about twenty-three per thousand, that many deaths are due to malaria caused by the deficient rural sanitation, that many Spaniards die of typhoid fever caused by the inadequate systems of public water supplies, and that many more die of tuberculosis due to congestion and the lack of sunshine and ventilation. While there has not been noted as yet in Spain the diminishing birth rate that is troubling other nations, Dr. Gómez Ocaña repeated the Spanish proverb, "each child brings to this world a loaf of bread underneath his arm," adding, provided his parents teach him how to work and become prosperous. He asserted that the sanitary problem lacks recognition in Spain. The working class who pay the largest tribute to infection know nothing about it. The socialists hardly mention sanitation in their programs. The middle classes are so engaged in money making that with true Mussulman resignation let death arrive even if it comes too soon. The press pays no attention to sanitary questions, and as an instance he cited the fact that some newspapers call *perrerias* (dog doings) the dog bites inflicted on people and which could be avoided if municipal ordinances were enforced. "For our politicians, the proposed sanitary law is a bad omen, for as soon as it is introduced in parliament the government falls out of power, and to be frank about it, we physicians have had so much to do with microbes that we have lost all fear of them and trust entirely too much to the natural defenses of the body." He went on declaring that most physicians who practice in small towns as well as in large ones, are hardly making a living and do not enjoy that inner satisfaction that comes from rendering services which are acknowledged and appreciated. He alluded to the sad scenes which can be seen in many physicians' homes caused by disease, old age and too many children, etc., and end many times in the physician himself or his family finding themselves in destitution. We intend, he said, to form at this Congress a great association with all the advantages that numbers can give, counting with the assistance of the state and taking advantage of all the safeguards that science may furnish.

The Spanish physicians, whose desires were well interpreted by the organizing board of the Congress, were very eager to have associated with them on this occasion, the Portuguese physicians whom they consider as their brethren and the French physicians whom they consider as their teachers. In the name of the Portuguese physicians, Dr. Ceferino Falcon, made some remarks and as the representative of France, Mme. Curie, the illustrious discoverer of radium, addressed the King with words of gratitude for what he had done during the war on behalf of French wounded and prisoners. Addresses were also delivered by Dr. Carracido, the president of the Central University, the Mayor of Madrid who offered the freedom of the city, the Minister of the Interior and finally the King.

THE KING'S ADDRESS

The King delivered an impromptu address, greeting in eloquent words the medical profession which he thanked for the way they spent their lives for their fellow creatures. In their struggle against death the public health authorities, not only lack money as the Secretary of Interior had previously said, but, in the King's words, they also lack hospitals, laboratories and schools where to learn and where to teach medicine. Therefore, he will take on himself the initiative in building up a new school where Spanish-speaking people from across the seas can receive instruction. The cost of a medical school is the same as that of a battleship of 12,000 tons. I want, he said, Spanish medicine to have its battleship. He reiterated his optimism and faith in Spain, which in his words is going forward.

After the meeting the King proceeded to the exhibition connected with the Congress and visited each section and talked with the exhibitors.

The work of the sections furnished a splendid proof of the progress accomplished by the medical profession of Spain, which has now entered all phases of science, bringing with it a spirit of research. This constitutes the greatest triumph that could be wished by all those who regretted the byzantinism of Spanish medicine during the previous generation. We study facts today and cases in particular. Without neglecting generalization, we always start with the fact and have as guides in our work observation and experimentation.

MME. CURIE'S LECTURE

The most remarkable of the lectures was the one given by Mme. Curie, the discoverer of radium, who at the School of Medicine gave a dissertation on radium, its nature and its properties. It was a moment to be long remembered when that distinguished lady assisted by her daughter and surrounded by famous scientists, ended her speech which was greeted by enthusiastic applause. A touching note was added by the Queen Dowager who was prominent in showing her approval of the high gifts of the lecturer. The Queen, who is in mourning for her brothers and relatives killed in the war, embraced Mme. Curie, who was there representing one of the Allied countries. So, as one of our wits said, it is the first time after the war that representatives of the dif-

ferent enemy countries have spoken to each other with affection. Science is a great power, indeed.

There were many other conferences given by Spanish and Portuguese physicians and a very interesting one by Dr. Sard, a Spaniard who practices in Paris, where he was the founder and medical director of the Spanish hospital operated there during the war.

RECEPTIONS

Their majesties, the king and queen, gave a reception to all those attending the Congress and their ladies in the evening of the second day of the Congress. With the democracy that characterizes all members of the royal Spanish family, the monarchs talked to all physicians who came near them. As the medical class is undoubtedly the most active of all those which go to constitute this country, the royal family are acquainted with a great many physicians who in turn introduced many others to the king and queen.

Among the banquets special mention should be made of the general banquet with more than 5,000 present. There were also many banquets given by the Madrid members to the foreign guests.

NEXT CONGRESS TO MEET AT SEVILLA

It was decided to hold the next Congress in the city of Sevilla, taking advantage of the Ibero-American exhibition which will be held there next year. At that time an attempt will be made to establish closer relations with the American countries. Physicians coming from the United States will be doubly welcomed as being our guests in addition to being Americans, and their presence will furnish evidence of the present tendency toward union and friendship that inspires all of us.

CUBA LETTER

HAVANA, July 10, 1919.

American Hospital in Havana

One of the most needed institutions today in Havana is an up-to-date American hospital for the benefit of the large Anglo-Saxon colony in this island. In every part of the world where there is a foreign colony, one of the first necessities it feels is the possession of its own institutions, such as churches, schools and hospitals, of which the last mentioned are, perhaps, the most indispensable. New York, for example, has its Jewish, French and German hospitals, and soon will have a Spanish hospital. In Cuba the Spaniards have built their several *quintas* (country houses with gardens or parks) and no doubt feel more at home in them than in the strictly Cuban hospitals, notwithstanding the fact that they are of the same race and language, and it would seem as if the Anglo-Saxon residents of Cuba must feel the same need even more sharply. It is becoming more and more the custom among Anglo-Saxon women to be confined in institutions instead of in their homes. This is even more necessary in Cuba, owing to the difficulty of procuring trained American nurses for the homes on such occasions.

The large number of banks, railroads, sugar estates, and various other foreign corporations employing Americans, Canadians and Britishers, would not only find such an institution of great comfort and help, but it would also constitute an insurance for their employees.

The plans for this American hospital are made and the approximate cost will be $300,000, which includes the site and the building, $150,000 of which is already available. The American colony of Cuba has received with joy the idea of having its own hospital, and we doubt not that it will soon be a reality.

Latin-American Medical Congress

The last session of the Congreso Médico Latino-Americano held at Lima, Peru, was a great success according to the report presented by Dr. Lius A. Baralt, the Cuban delegate. The next session of the congress will take place in Havana, Cuba, in 1922.

Personal

Dr. Julio F. Arteaga has been awarded the Gordon prize in physiology for his work on "The Localization of the Sensations of Thirst and Hunger." Dr. Arteaga is the editor of the *Revista de Medicina y Cirugía de la Habana.*

Dr. J. Varela Zequeira and Ernesto de Aragón have been elected president and secretary, respectively, of the Colegio Médico de Cuba.

Dr. Francisco M. Fernández is the editor of the new *Revista Cubana de Oftalmología*, published in Havana.

Dr. A. Rodriguez Ecay, a physician of the medicolegal service of the city of Havana, died, July 8, at his home.

PARIS LETTER

PARIS, June 26, 1919.

War Deafness

At a recent meeting of the Academy of Medicine, Dr. Marage discussed the causes and the duration of the cases of deafness produced by the explosion of shells of large caliber, without any traumatism by a fragment of metal or otherwise. These hypo-acusias are due to the enormous pressure (from 150 to 300 kg. per square centimeter) which is exerted for an exceedingly brief space of time (one hundredth of a second) on the whole surface of the body, and is transmitted through the fluids of the organism to the cortical surface of the brain. Sometimes deafness so produced disappears gradually of itself within two or three months after its causation. Some cases, however, are very serious, and a spontaneous cure is out of the question.

Treatment of Purulent Arthritis of the Knee

At one of the recent sittings of the Surgical Society of Paris, Dr. Tuffier, hospital surgeon and associate professor of the Faculté de médecine de Paris, presented a report on forty-eight cases of purulent arthritis of the knee which Dr. Delrez of Liége had treated at the field hospital of La Panne by the Willems method; that is, by arthrotomy followed by immediate active mobilization.

Of thirty-one simple cases, the results were as follows: Seventeen were successful, one was partially successful, seven ankyloses resulted, four resections, one death from embolism and one death from septicemia after amputation of the thigh. Of seventeen cases of purulent arthritis following an osteoarticular lesion, the treatment was successful in two cases, partially successful in two, seven cases resulted in ankylosis, five in resection and one in amputation. Successful results are termed those which permitted the patients to flex the joint more than 45 degrees and which promised this as a definite and permanent condition. Partially successful results are those which allow a partial flexure of the joint of from 20 to 40 degrees. The causes of the failure or partial failure of the method are to be sought in the nature of the infection (the streptococcic infections being especially serious) and the extent of the bone lesions.

In certain cases active mobilization cannot be accomplished for various reasons: (1) The age of the patient or the excessive pain (children, especially, not always being able to endure the pain caused by the first attempts at active mobilization); (2) a sort of functional inhibition (of which Delrez observed four cases out of forty-eight) which prevented any contraction of the extensor muscles of the knee, and (3) a serious lesion of the extensor muscles of the leg — a large or contused wound of the triceps. In these particular cases active mobilization should be replaced by passive mobilization which may give absolutely satisfactory results, but will require special care and watchfulness.

Other factors may enter in to embarrass the therapeusis in the course of the treatment; for instance, certain intercurrent affections, such as influenza and acute sore throat, exert a general influence on the condition of the patient, and even affect the local condition so as to diminish considerably the capacity for active mobilization. Furthermore, after a period of easy active mobilization, complications may arise, especially in cases of purulent arthritis following an osteoarticular lesion; occasionally, too, in cases of simple, penetrating wounds without bone lesion there will be a progressive limitation of movement and a cicatricial retraction resulting in increased stiffness of the joint, even on slight flexure with the classic external rotation of the leg, and finally in ankylosis. In combating these complications the older therapeutic methods come into their rights. A choice must be made between ankylosis and resection. The local condition of the wound and the general condition of the patient are the determining factors in choosing one or the other. If ankylosis can be obtained under good conditions which will permit of a slight flexure, it is always preferable to resection.

Compulsory Notification of Tuberculosis.

The Society of Medical Practitioners, after a discussion of the question of compulsory notification of tuberculosis, has published the following resolution, which received the unanimous approval of the society:

The Society of Medical Practitioners, convinced, as it is, of the necessity of waging a bitter fight against tuberculosis, and desirous of rendering support to the government, but opposed to the idea of creating medical officials to accomplish a task which naturally falls to the medical practitioners, cannot accept the principle of compulsory notification of tuberculosis until the government shall have introduced such

measures as will give the necessary assistance to indigent patients and their families, such as proper accommodations in hospitals. The society is convinced that, in the meantime, the proper field for the antituberculosis campaign lies in using all possible prophylactic measures in protection of the children; wide publicity as regards the principles and practice of hygiene; combating the alcohol evil; improvements in the character of the homes of the poor, and the amelioration of the social conditions of employment.

The Eight-Hour Day in the Hospitals and the Pharmacies

M. Henri Rousselle, member of the municipal council, recently gave his colleagues the benefit of the investigations and negotiations which he has been carrying on with the city administration in order to bring about the application of the eight-hour day to the hospitals of Paris. The proposed reform concerns more than 12,500 persons. In order to assure the sick the protection that is their due, the present day-shift will continue to devote a morning and an afternoon period to the care of their patients, the morning period to begin at 5 o'clock and the afternoon period at 3 o'clock. This schedule makes it unnecessary for the patients to change attendants, and the physician always has the same personnel to deal with. The night-shift will perform its duties from 11 to 7 o'clock, with the same personnel as at present. However, an "équipe de garde," or provisional shift, will be established, much after the fashion of the "équipe de veille," or watch guard, in order to secure permanence of attendance in the wards during meal times and during the break between the day-shift and the night-shift.

The application of the eight-hour day cannot be made, by reason of multiple difficulties, until the new schedule has been tried out in one or two of the large hospitals.

In this same connection, the Comité intersyndical des pharmaciens of the department of the Seine has informed the public that in response to representations drawn up by the syndicat des préparateurs en pharmacie, the following order of the day has been unanimously adopted by the Comité patronal:

In view of the fact that the pharmaceutical profession is quite distinct from every other profession, and in view of the fact that its hours of duty bear a very close relation to the consultation hours of physicians and to their hours for professional calls, which have not been regulated by law; considering the fact that in the present state of affairs the strict application of the eight-hour law would bring about a condition prejudicial to patients and to the people of Paris; considering, furthermore, that night service has been assured now for a long time by the voluntary offer of services on the part of the pharmacists themselves, the Comité intersyndical, acting in the name of a vast majority of the pharmacists of the department of the Seine, has decided, in view of all the facts, to urge all pharmacists of this department to reduce, from now on, the hours of work for their personnel, keeping in mind, at the same time, the needs of the public in the localities in which they are located, until such time as definite regulations shall be adopted in accordance with law, the purpose of this resolution being to harmonize all interests concerned and also to show respect for both the letter and the spirit of the law.

Withdrawal of Bread Tickets

Our importations of flour for the past few months having been large, the food administration has found it advisable to abolish the use of bread tickets.

Reciprocity Between French and American Universities

L'Union universitaire américaine en Europe elected recently a new executive committee which will enter on its duties, July 1, 1919. Prof. Henry A. Yeomans, dean of Harvard College and exchange professor at the Sorbonne last year, is the chairman.

Since establishing its headquarters in the Royal-Palace-Hôtel, rue de Richelieu, Paris, the union has enrolled about 35,000 students from the various services of the army. This new association of students from the American army in France, composed, as it is, of groups of American students from the fourteen universities of France, has just succeeded in working out a plan whereby it will be possible to send a considerable number of French students for attendance at American universities at the opening of the new school year in September.

Personal

At the meeting, held June 17, the Academy of Medicine elected Dr. Ed. Jeanselme as an active member of the section of medical pathology, and to serve as hospital surgeon and clinical professor of cutaneous and syphilitic diseases at the Faculté de médecine de Paris.

Exhibit of Prosthetic Appliances

The *Journal officiel* has just published an order in accordance with which practical demonstrations of prosthetic appliances and of agricultural tools and implements intended for the use of those mutilated in war will be held in 1919 on the farms of the society promoting the back-to-the-farm movement. The purpose of these demonstrations is to encourage the manufacture of prosthetic appliances of all kinds, such as will be needed by the war mutilated in order to permit them to continue their agricultural labors. The prosthetic appliances will restore in a measure the function of the amputated member, and the agricultural machines will permit mutilated men to perform all kinds of farm work without making very extensive use of the mutilated member.

French manufacturers and the manufacturers of allied and neutral countries or their representatives residing in France are invited to take part in the exhibit. The appliances and implements will be examined by a commission to be appointed by the departments of agriculture and food administration.

The appliances and machines will be tried out at the exhibit by the mutilated men under the actual conditions of use and will be tested long enough to satisfy the commission as to their advantages and disadvantages. These trials will begin with the harvest and will be continued until after the sowing of the wheat, and in this way the appliances will be tested in connection with almost all kinds of agricultural work.

Researches in Regard to Cancer

The Franco-Anglo-American League Against Cancer (THE JOURNAL, April 27, 1918, p. 1248) recently held a meeting in Paris presided over by M. Justin Godart, former undersecretary of state for the medical department of the army. Godart discussed the purpose of the league, which is primarily to carry on scientific researches in cancer. A committee composed of women will have charge of house investigations and control, including hospitalization of cancer patients. Dr. Hartmann, professor of clinical surgery at the Paris School of Medicine, emphasized the danger which cancer presented at the present time. Every year there die in France 33,000 cancer victims. In Paris alone, in 1913, 3,655 succumbed to this dread disease. Along with tuberculosis, it constitutes one of the two greatest evils that threaten mankind, affecting women even more than men; and that, too, right in the prime of life. The fight against tuberculosis is today at least on the way to a thorough organization. The same is not true of cancer. It is very necessary, therefore, without delay, to instruct the public in regard to the danger which threatens and with respect to the best means of avoiding it. As regards treatment of the cancerous, it is essential that women should learn, under the direction of physicians, just what are the best methods to employ.

An American the Recipient of the Croix de Guerre

Capt. Sterling S. Beardsley, of the American Red Cross, has just received from Marshal Petain the croix de guerre in view of having, at Château-Thierry, after the evacuation of the city, continued the service of his canteen in spite of numerous bombardments and aerial raids.

Personal

At the meeting of June 24, the Academy of Medicine proceeded to elect an active member in the section of legal medicine, in the place of Professor Chantemesse, deceased. Dr. Balthazard, professor of legal medicine at the Paris School of Medicine, was elected by thirty-seven votes out of fifty-four.

At the meeting of June 23, the Academy of Science elected a member in the section of medicine and surgery, to take the place of Professor Dastré, deceased. Dr. Fernand Widal, hospital surgeon and professor of clinical medicine at the Paris School of Medicine, was elected by thirty-three votes out of fifty-eight.

Dr. Gillot, agrégé professor at the Alger School of Medicine and Pharmacy, has been appointed professor of the clinic for tropical, syphilitic and cutaneous diseases, in the same school, in place of Professor Brault, deceased.

Dr. Breton, agrégé professor at the Lille School of Medicine and Pharmacy, has been appointed professor of hygiene and bacteriology, at the same school, in the place of Professor Calmette, resigned.

Dr. Bué, professor of obstetrics and hygiene of early infancy at the Lille School of Medicine and Pharmacy, has

been appointed professor of clinical obstetrics at the same school, in place of Professor Oui, deceased.

Dr. Froelich, agrégé professor at the Nancy School of Medicine, has been appointed professor of infantile and orthopedic clinical surgery, in the same school.

LONDON LETTER

LONDON, June 26, 1919.

The Disproportion of the Sexes

At the National Birth Rate Commission, Commissioner David C. Lamb, director of the emigration department of the Salvation Army, gave important evidence. He said that if a severe spell of unemployment and distress followed the war, there was no hope of an improved birth rate in this country, though no doubt there would be large migration from it. It had been stated that the C 3 classes were adding to the population in larger proportion than the A 1 classes; but in view of the increased publicity given to all matters pertaining to sex relationship during recent years, he questioned very much if the C 3 classes, faced with the prospect of hard times, would continue to be so prolific. The lack of houses would also prevent many of the other classes from marrying, and from that cause also the birth rate would suffer. The disproportion of the sexes, which before the war was causing grave disquietude, had now assumed a menacing aspect. Socially it promoted all sorts of evils. In this time of empire reconstruction, one of the most vital considerations should be the question of a more equal distribution of the sexes throughout the empire. More equal distribution was necessary: (1) that men in the overseas dominions should have the opportunity of getting married; (2) that there might be a higher standard of home life in the dominions affected; (3) for the sake of the women of the motherland who were forced to the repression of their maternal instincts. The progress of Canada and Australia had been hindered for lack of adequate female population, and both in Australia and New Zealand attention had been directed to a declining birth rate. The Salvation Army by means of its emigration department had been doing much to assist women to settle in the overseas dominions, and had emigrated about 10,000 single women. The failures did not amount to 0.5 per cent. Most of the girls had married well, and 70 per cent. of those sent to Canada had married within three years. At present the migration department was waiting for shipping facilities. They had already had applications from hundreds of girls desiring to go to various parts of the dominions. A large number had been employed during the war in munition factories, on the land, and in war work generally. They were mainly between the ages of 17 and 26, and the majority wished to go to Canada, Ontario being particularly favored. It was probable that in future the proportion of single women transferred to the dominions would be considerably greater than it ever had been. It was expected that there would be opportunities oversea for girls who had been working on the land during the war or employed in munition making, or in the various other occupations usually left to men. The housing question would have a big effect on the birth rate and on emigration. It was estimated that there was a lack of nearly 400,000 houses in England and Wales alone. It was reported that there would be a large exodus from Scotland when the shipping restrictions were removed. Was this to be wondered at when 47.9 per cent. of the population were living in houses of one and two rooms, the proportion in Glasgow being 62 per cent.? Scotland's young men and maidens were favoring migration more and more, and the population was declining perceptibly. Something should be done to make Scotland attractive for her own people. But the bothie system still remained in the rural districts, only slightly modified within the last thirty years, and in the cities, towns and villages the depressing and barrack-like tenement continued to spring up in all its unredeeming ugliness.

Ministry of Health

The ministry of health, with Dr. Addison, president of the Local Government Board, as the first minister of health, has been inaugurated. This means the organization under one ministry of all the public health activities which in the past have been administered by several departments. With the creation of the ministry of health, the Local Government Board (the most important of the old departments dealing with public health) will disappear, its functions and staff being handed over to the ministry of health. Similarly the insurance commissioners, who administer the national insurance act, will disappear, their functions being taken over by the new ministry. The first step taken by the minister of health will be to set up four consultative councils to give advice and assistance in connection with medical and allied services, national health insurance (approved societies work), local health administration, and general health questions. These councils, which will include a number of women, will consist of not more than twenty persons who have had practical experience of the matters for the purpose of which the councils are established. A health program is being drawn up, and it is hoped to get some large proposals ready this year. Apart from the legislative program, it is proposed to push on as rapidly as possible with changes which can be carried through by administrative action. It is hoped to set up a great many maternity and child welfare centers. More centers for dealing with venereal disease are proposed, and the great problem to be faced here is how to conduct them so that the people for whom they are provided will be ready to make use of them.

A Floating School for Physicians

A proposal, made by Dr. Louis Sambon, has excited considerable interest. It is the establishment of a floating school of tropical medicine. The idea is that the students shall embark in a ship fitted up with all the necessary apparatus and laboratories, and shall be taken from one tropical area to another. They will thus be enabled to visit the many fields in which disease flourishes, and, as the passengers will consist of men of every nationality, a new link of world friendship will be forged. Moreover, those workers who are struggling against the various diseases of hot climates will be stimulated by the visits of the "school." It is proposed to visit British, French, American and Italian possessions.

Amendment of the National Insurance Acts

The war has produced a disturbance in the working of the national insurance acts. The government has, therefore, decided to introduce a bill for the purpose of securing that the intention of the national insurance acts is not defeated in certain respects by incidental consequences of the rise in the cost of living due to the war. Under those acts, persons engaged in manual employment come within national insurance without any regard to amount of income or rate of remuneration; but persons who are engaged in nonmanual employment are excluded from compulsory insurance when their rate of remuneration is in excess of $800 per annum. As a result of the increased cost of living, employers have almost universally found it necessary to grant war bonuses to workers, with the result that in a large number of cases (it is believed between half a million and a million) nonmanual workers whose prewar remuneration was less than $800 per annum receive remuneration exceeding that rate, although the circumstances of their employment are wholly unchanged, and they have not been taken out of the economic status of the persons comprised in the act. If an amendment is not made in the acts, such workers must lapse from insurance and lose all benefits, unless they are entitled and can afford to become voluntary contributors; and even then they are deprived of medical benefit, they are under more onerous conditions as to cash benefits, they lose their employers' contributions, and they must themselves pay their weekly contributions, at an enhanced rate. The injustice would be aggravated by the fact that the distinction between the manual and the nonmanual worker is in many cases only technical. It has, therefore, been decided to substitute, for the figure $800, $1,250, which corresponds to the rise of wages in the case of nonmanual workers. This proposal has excited considerable apprehension in the medical profession. The hostility of a large number of physicians to the insurance act has never abated, and they are, therefore, opposed to any extension of the act. A deputation from the council of the British Medical Association has been received by the government. While recognizing that there was a case for keeping in insurance persons of the class that Parliament originally intended to be insured, the deputation urged that the simple change of the income limit which was proposed might have the effect of bringing into national insurance, and taking out of the sphere of private practice, a considerable number of persons who had hitherto had no difficulty in employing physicians to treat them as private patients. The representative of the government would not give a pledge to bring forward any provision to restrict the proposed measure to persons who were previously insured, but said that the government would be prepared to consider any practical amendment brought forward by a private member on the subject.

Deaths

Abraham Jacobi ● New York City, for more than sixty years one of the most notable figures in American medicine, President of the American Medical Association in 1912-1913, died suddenly at his summer home, Lake George, N. Y., July 10.

Dr. Jacobi was born at Hartum, Westphalia, Germany, May 6, 1830. He studied at the Universities of Greifswald and Göttingen, graduating from the University of Bonn in 1851. He was intimately identified with the German revolutionary movement in 1848 for which he was imprisoned for two years under a charge of high treason. In 1853, while under sentence, he escaped to England and attempted medical practice unsuccessfully at Manchester, and then migrated to America, settling first in Boston and later moving to New York City. In 1860 the New York Medical College established the first professorship of diseases of children and invited Dr. Jacobi to accept this chair. This position he held until 1864, when he accepted a similar position in the University of New York. In 1870 he became professor of pediatrics in the College of Physicians and Surgeons, holding this position for twelve years and retiring as emeritus professor.

During a long career Dr. Jacobi held practically every honor which the medical profession can give to its members. He was twice president of the American Pediatric Society and the first chairman of the Section on Diseases of Children of the American Medical Association. He was president of the Association of American Physicians in 1896; of the New York State Medical Society in 1882; of the New York Academy of Medicine from 1885 to 1889. He was a member and officer of many medical societies both here and abroad. As a contributor to medical literature he is perhaps best known for his work on the intestinal disturbances and the therapeutics of infancy and childhood. His most important papers, monographs and addresses were assembled some years ago in eight volumes in the Collectanea Jacobi.

Dr. Jacobi was actively interested in his profession up to the moment of his death; thus at the age of 88 years he attended the annual session of the Association in Chicago and was a conspicuous figure at all of the meetings. Throughout his life he was associated with eminent men, and numerous anecdotes tell of conversations with his early friend Carl Schurz, of meetings with William Osler, Austin Flint and many other noted statesmen and physicians. Although a German by birth, Dr. Jacobi was an ardent American. One of the most significant tributes of his life was the urgent invitation extended to him, October, 1893, to become professor of pediatrics in the University of Berlin, and this position he refused with the historic words "I was, I am, rooted to the American profession that I have observed to evolve without governmental aid out of its own might to become equal to any on the globe."

Dr. Jacobi was perhaps equally well known as a great citizen. He was a formidable opponent of prohibition and an ardent advocate of birth control, and in every other matter of public interest he was a conspicuous character.

On the occasion of his seventieth birthday and each year since, he was especially honored by the medical profession.

Dr. Jacobi was in good health up to but a day before his death. In September, 1918, he had a narrow escape from death when his house at Lake George burned. This year, on his return to Lake George, he occupied the residence of his great compatriot, Carl Schurz, and it was in the house of this famous advocate of human freedom that the great and beloved physician died.

ABRAHAM JACOBI, M.D., 1830-1919

Clement Andariese Penrose ● **Major, M. C., U. S. Army,** Baltimore; Johns Hopkins University, Baltimore, 1897; aged 45; died in the Church Home and Infirmary, Baltimore, July 4, from the effects of septic bronchitis. Major Penrose served as resident physician in Johns Hopkins Hospital in 1897 and 1898, and was on the staff with William Osler, Howard Kelly and W. S. Halstead. He was a specialist in dietetics and functional disorders. He served as surgeon in chief and vice director of the Bahama Expedition in 1903, and as chairman of the food economy commission in 1907. He entered the United States service, Sept. 4, 1917, and served with the British and American Expeditionary Forces, giving especial attenten to sanitary conditions in army hospitals and at the front. While engaged in this study in the training camps of the Allies he contracted septic bronchitis, from the effects of which he died.

John Harris Duncan, St. Louis; University of Missouri, Columbia, 1874; Bellevue Hospital Medical College, 1875; aged 66; a member of the Missouri State Medical Association; vice president of the St. Louis Medical Library Association in 1898, and president of the Kansas City Academy of Medicine in 1892; a specialist in dermatology; professor of physiology in the University of Missouri from 1875 to 1883; professor of physiology and dermatology in the University Medical College of Kansas City from 1883 to 1893; then for one year professor of the same subjects in St. Louis College of Physicians and Surgeons; professor of physiology in the Barnes Medical College, St. Louis, from 1898 to 1901, and since that time professor of diseases of the skin and syphilis in the Marion-Sims-Beaumont Medical College, St. Louis; died at his home, June 22.

Frank M. Donohue ● New Brunswick, N. J.; New York University, New York City, 1881; aged 59; died at his summer home, Cedar Crest, near Bound Brook, N. J., June 28, from heart disease. Dr. Donohue specialized in surgery, and was surgeon to the John Weld Memorial Hospital, consulting surgeon to the Somerset Hospital, surgeon to the Pennsylvania system, and one of the founders and chief surgeon to St. Peters Hospital. He served as president of the Middlesex County Medical Society in 1884, 1912, 1914 and 1915, and was a director of the Peoples National Bank, and a trustee of the New Brunswick Trust Company and New Brunswick Savings Institution.

Nathaniel Bowditch Potter ● Santa Barbara, Calif.; Harvard Medical School, 1896; aged 49; died at his home, July 4. Dr. Potter was a specialist in internal medicine; and prior to his removal to California, was professor of clinical medicine in his alma mater, chief of the medical department in St. Mark's Hospital, New York City, and consulting physician to the French, New York Nose, Throat and Lung, and the Central Islip State hospitals. He was a fellow of the

● Indicates "Fellow" of the American Medical Association.

New York Academy of Medicine. He went to California in 1918, where he established the Memorial Laboratory and Clinic for the Study and Treatment of Nephritis, Gout and Diabetes, at the Cottage Hospital, Santa Barbara.

George Osborne Hughes, Winnipeg, Man.; University of Virginia, Charlottesville, 1897; L.R.C.P. (Lond.), L.R.C.S. (Eng.), and M.R.C.S. (Eng.), 1899; aged 48; president of the St. Davids Welsh Society; a member of the staff of the Pilgrims' Hospital, Winnipeg, and the Winnipeg Free Dispensary; one of the founders and promoters of the *Western Canada Medical Journal;* died at his home, May 11, from typhoid fever.

Henry Simon Oppenheimer ● New York City; College of Physicians and Surgeons in the City of New York, 1874; aged 75; a member of the American Ophthalmological Society, the American Congress of Physicians and Surgeons and a fellow of the New York Academy of Medicine; ophthalmologist to the Montefiore Home; died at his home, July 5.

Anna Howard Shaw, New York City and Washington, D. C.; Boston University, 1885; aged 72; a leader in woman suffrage; president of the National Women's Suffrage Association in 1904 to 1915; who was given the honorary degree of D.D. by the Kansas City University in 1912; died, July 2, at Moylan, Pa., from pneumonia.

Elizabeth Merritt Hooper, Port Huron, Mich.; Woman's Medical College of Pennsylvania, Philadelphia; 1883; aged 59; supreme medical examiner and chairman of the supreme medical board of the Woman's Benefit Association of the Ladies' Order of Maccabees of the World since 1902; died at her home, June 25.

William Wesley Houser, Lincoln, Ill.; Eclectic Medical Institute, Cincinnati, 1859; aged 81; acting assistant surgeon, U. S. Army, and later major, U. S. V., during the Civil War; for seven terms president of the Illinois State Eclectic Medical Society; was struck and instantly killed by a street car in Lincoln, June 23.

Harry S. Jarrett ● Towson, Md.; College of Physicians and Surgeons, Baltimore, 1884; aged 58; a charter member and once president of the Baltimore County Medical Society; physician to the Baltimore County Jail; died in Mercy Hospital, Baltimore, June 27, from heart disease.

Elizabeth R. Bundy ● Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1884; aged 70; associate professor of anatomy in her alma mater, and for sixteen years visiting physician at the Woman's Hospital, Philadelphia; died in that institution, July 2.

Samuel Malcolm Evans, Bloomfield, Mo.; Kentucky School of Medicine, Louisville, 1898; aged 44; a member of the Missouri State Medical Association; died, May 13, at the Touro Infirmary, New Orleans, after an operation for obstruction of the gallbladder.

Frederick Day Marshall, Chicago; College of Physicians and Surgeons in the City of New York, 1868; University of Michigan, Ann Arbor, 1868; aged 78; a member of the Illinois State Medical Society; a veteran of the Civil War; died at his home, July 6.

Carol Goldenthal ● New York City; University of Vienna, Austria, 1906; aged 38; a specialist in dermatology; assistant dermatologist to the City Hospital, and assistant surgeon to the Harlem and Bronx Dispensary; died at his home, July 2, from septicemia.

Frederick Stanton Songer ● Kinmundy, Ill.; Marion-Sim College of Medicine, St. Louis, 1897; aged 44; a member of the Association of Military Surgeons of the United States; major, M. C., Ill., N. G., assigned Fifth Infantry; died at his home, July 4.

George Hoffman Parker ● Trenton, N. J.; University of Pennsylvania, Philadelphia, 1896; aged 56; visiting physician to Mercer Hospital, Trenton; local surgeon for the Philadelphia and Reading System; died at his home, June 25.

John Reynolds, Salem, Ore.; Miami Medical College, Cincinnati, 1874; University of California, San Francisco, 1876; aged 82; for many years a member of the board of trustees of Willamette University; died at his home, June 22.

John Nesbit Black, Perry, Ohio.; University of Wooster, Cleveland, 1889; aged 59; a member of the Ohio State Medical Association; for two terms coroner of Lake County, Ohio; died at his home, June 23, from pneumonia.

Joseph T. Rice, Texarkana, Ark.; University of Alabama, Mobile, 1872; aged 67; in November, 1876, town marshal of Texarkana, Texas; later a clergyman of the Baptist Church; died in a hospital in Texarkana, June 23.

Adam S. Todd, Manning, S. C.; College of Physicians and Surgeons, Baltimore, 1891; aged 66; a member of the South Carolina Medical Association; died in the Columbia Hospital, Columbia, S. C., June 26.

Charles B. Hough, Ambler, Pa.; Jefferson Medical College, 1878; aged 64; a member of the Medical Society of the State of Pennsylvania; died from heart disease, July 2, while making a professional call.

Washington Dodge, San Francisco; University of California, San Francisco, 1884; aged 60; one of the survivors of the *Titanic* disaster; died at his home, July 2, from the effects of a gunshot wound.

Dillard Estep Samuell, Wilmington, Ill.; University of Illinois, Chicago, 1908; aged 42; died in St. Mary of Nazareth Hospital, Chicago, June 2, after an operation for appendicitis.

Walton Preston, San Francisco; Rush Medical College, 1881; aged 68; a member of the Medical Society of the State of California; died at his home, July 1.

Julius Parks Clements, Atlanta, Ga.; Medical College of the State of South Carolina, Charleston, 1861; a Confederate veteran; died at his home, June 3.

Charles McMunn Sloane, Turtle Creek, Pa.; University of Pittsburgh, Pa., 1905; aged 54; died suddenly in the railway station at Turtle Creek, June 21.

Joseph Marshall, Durand, Mich.; Detroit Medical College, 1878; aged 73; a veteran of the Civil War; died in a hotel in Leavenworth, Kan., June 25.

John Francis Potter, Dow City, Iowa; St. Louis College of Physicians and Surgeons, 1893; aged 62; died at his home, June 22, from diabetes.

William B. Kennedy, Guelph, Ont.; Queens University, Kingston, Ont., 1878; aged 62; died at his home, March 17, from angina pectoris.

John Taylor Tweedy, Tabor, Iowa; Louisville (Ky.) Medical College, 1890; aged 64; died in Mercy Hospital, Council Bluffs, Iowa, June 19.

Virginia Wicklife Smiley, Carmel, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1887; died in San Francisco, July 2.

Walter Junius Hildebrand ● Gonzales, Texas; Jefferson Medical College, 1896; aged 45; died at his home, May 20, from pneumonia.

David E. Smalley, Rich Hill, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1873; aged 74; died at his home, June 29.

James Lamar Codie, Lynchburg, Tenn. (license, Tennessee, 1889); a practitioner for thirty-one years; died at his home, June 20.

I. W. Perkins, Jackson, Tenn.; University of Nashville, Tenn., 1882; aged 84; died at his home, June 19.

Marriages

Cyril Amos Youngs, Lieut. (j. g.), U. S. Navy, to Miss Hazelle McCall, both of Kalamazoo, Mich., June 28.

Charles Allen Griffith, Oak Park, Ill., to Miss Rhoda Marguerite Phillips of East Chicago, Ind., June 18.

Herbert Charles Allison, Major, C. A. M. C., London, Ont., to Miss Ruth H. Davies of Chicago, recently.

John Radway LeComte, New York City, to Mrs. Mary Semple Brandt, at Asbury Park, N. J., June 26.

Charles Daniel McCarthy, Jr., Malden, Mass., to Miss Mary Margaret Gallivan of Boston, June 21.

Frank Barrett Livezey, Philadelphia, to Miss S. Elsie Nice of Germantown, Philadelphia, June 28.

Edgar Roy Brigham, Mosinee, Wis., to Dr. Adella Ruby Black of Washburn, Ill., recently.

Arthur Theodore Johnson, Neenah, Wis., to Miss Sarah Bjoraker of Minneapolis, June 20.

John Hancock McClellan, Chicago, to Miss Julia Goodman of Hamilton, Ohio, July 3.

William Purnell Yerger to Miss Helen Young, both of Mound, La., May 14.

Morris Schaner to Miss Esther Antin, both of Toledo, Ohio, recently.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

DR. DE SANCTIS' RHEUMATIC AND GOUT PILLS

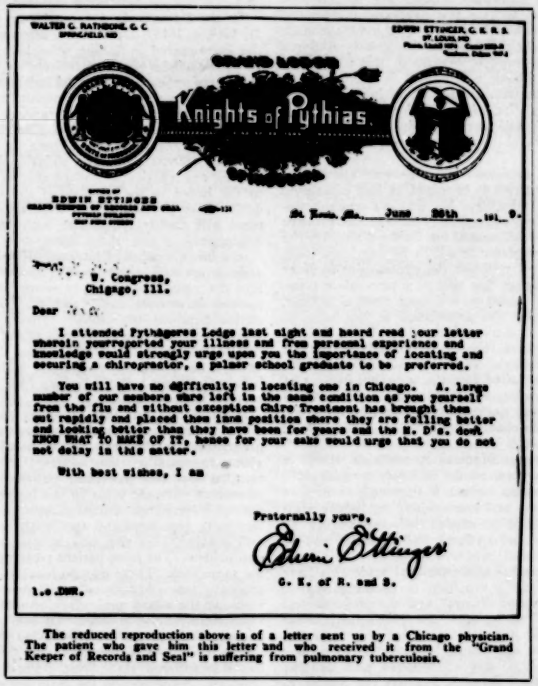
A Dangerous, Colchicum-Containing Nostrum

"Dr. De Sanctis' Rheumatic and Gout Pills" are put on the market by Edward Cleaver of London, England. The American agents are E. Fougera and Co., Inc., New York. During the past few years, THE JOURNAL has received a number of inquiries regarding the composition of these pills, and in every instance has had to acknowledge that it was unable to furnish this information, as no analysis had been made in the Association's chemical laboratory, and available references failed to show that they had ever been analyzed elsewhere. For this reason an investigation of the pills was made and the chemists of the A. M. A. Chemical Laboratory have reported, in part, as follows:

CHEMISTS' REPORT

The various specimens of De Sanctis' pills that were purchased for analytical purposes were found to be round, uncoated, and light brown in color. There was some variation in the color of different lots. A little arrowroot starch was found in each box, used as a dusting powder. The pills were very hard, rather brittle, but quite difficult to powder. The pills were not readily disintegrated by water or dilute acids, even when warmed; when warmed with a dilute sodium hydroxid solution, they readily disintegrated.

The average weight of a pill was 0.3213 gm., or 5 grains. A microscopical examination of the pills (after they had been reduced to powder) showed powdered colchicum seed in abundance and also traces of arrowroot starch, no doubt from the dusting powder. Since colchicum seed was so abundant, the powder was assayed by the U. S. Pharmacopeial method for colchicum seed (U. S. P. IX, p. 120). In one assay 3.75 gm. gave 0.0204 gm. colchicin, or 0.54 per cent. In a duplicate 5 gm. gave 0.0234 gm. colchicin or 0.47 per cent., average, 0.5 per cent. The alkaloid obtained had the characteristic appearance and odor of colchicin when separated from the seed under these conditions. From 1 gm. of the powdered pills there was obtained 0.0425 gm. ash, or 4.25 per cent. There were also found about ¼ grain benzoic acid and about ½ grain milk sugar to each pill.


WALTER G. RATHBONE, G. C.
SPRINGFIELD MO
EDWIN ETTINGER, G. R. & S.
ST. LOUIS, MO
GRAND LODGE
Knights of Pythias
June 30th
U. S. Congress,
Chicago, Ill.
I attended Pythagoras Lodge last night and heard read your letter wherein yourreported your illness and from personal experience and knowledge would strongly urge upon you the importance of locating and securing a chiropractor, a palmer school graduate to be preferred.
You will have no difficulty in locating one in Chicago. A large number of our members were left in the same condition as you yourself from the flu and without exception Chiro Treatment has brought them out rapidly and placed them in a position where they are feeling better and looking better than they have been for years and the M. D's. don't KNOW WHAT TO MAKE OF IT, hence for your sake would urge that you do not not delay in this matter.
With best wishes, I am
Fraternally yours,
Edwin Ettinger
G. K. of R. and S.

The reduced reproduction above is of a letter sent us by a Chicago physician. The patient who gave him this letter and who received it from the "Grand Keeper of Records and Seal" is suffering from pulmonary tuberculosis.

From this examination we conclude that De Sanctis' pills contain powdered colchicum seed, benzoic acid, and sugar of milk. There was also present fatty material which resembled the fat of colchicum seed, but might be, in part, added fatty acid. The percentage of colchicin found indicated that a colchicum seed of high alkaloidal content was used in their manufacture or the possible reinforcement of the pills with colchicum extract or colchicin. De Sanctis' pills are essentially 5 grain doses of powdered colchicum seed.

From the chemists' report it will be seen that the only drug in De Sanctis' pills (present in therapeutic quantities) is powdered colchicum seed. The ½ of a grain of milk sugar is doubtless merely an excipient. The fatty acids or fatty matter from colchicum seed that were present are inert, at least in the quantities found in the pills. The only office which fatty acids might perform would be to give the pills an enteric quality, preventing their absorption until they reach the intestines. Although the entire pills only average 5 grains each in weight, there was present the equivalent of 5 grains of powdered colchicum seed. This indicates, as the chemists have stated, either that a seed of high alkaloidal content is used, or else that the strength of the pills is augmented by the addition of the alkaloid colchicin or, possibly, of colchicum extract.

Here then, we have sold for self-medication an extremely poisonous drug, with no warning of the risk the public runs in using it. While the directions call for "one pill every 8 hours until relieved," it is notorious that the public takes the attitude toward "patent medicines" that, if a little is good, more is better, and the average user of remedies for self-treatment is likely, unless there is some warning, to use his own discretion as to the amount taken.

The individual dose is above that of the average recommended in the United States Pharmacopeia. Colchicum or its alkaloids—or for that matter, any drug as toxic as colchicum—have no place in preparations of the home-remedy type. In the case of all "patent medicines," public interest demands that the full quantitative formula of the therapeutically active ingredients should be given on the label, for when the public prescribes for itself, it has a right to know what it is taking. Unfortunately, public interest clashes with vested interests and, as usual, vested interests get the better of it. In the case of such dangerous preparations as De Sanctis' pills, if their sale is to be permitted at all, not only should the names and quantities of all therapeutically active ingredients in the mixture be given, but the law should require that the word POISON be plainly printed on the label.

Correspondence

MEDICAL SOCIETY VISITORS

To the Editor:—The county medical society is the basis of our professional organization. To make it more attractive and more effective strengthens the American Medical Association. It is benefited largely by giving opportunity for interchange of thought among its members. The larger its membership, the more and broader the opportunity; but even the largest society is helped by the presence and words of professional colleagues from outside its own membership.

A good talker, with something of value to talk about, is able to add greatly to the interest and profit of the meetings of any medical society where he is known by name and valuable papers he has published. There are leaders and teachers in medicine who write a few papers of the highest value, who are not often heard in their own local societies, but who might repeat their papers or lectures in a dozen different cities with the highest benefit to the profession. Exchange of lecturers among universities is coming to be practiced more and more, with quickening of interest among students and fuller utilization of the ability of the lecturer. It is time to provide for such exchanges in that educational institution of highest value to the medical profession, the county society.

Nor are the benefits confined to the hearers alone. The lecturer or reader of the paper is benefited by free discussion of the ideas he has to advance. He may be much better posted on his subject than any of his hearers; yet through some different point of view brought out in the discussion, he may get new light on problems to which he has given long and close study. Thinkers welcome the opportunity to place their thoughts before hearers that will be interested in them.

By visitors from outside, many a county medical society, small or large, has found the attendance at its meetings increased, the interest in them quickened, and the literary activity of its own members stimulated, besides getting the benefit of new ideas that might reach it through this channel. If some of the papers crowded into the section meetings of the American Medical Association could be used to stir up local society meetings, both organizations might be benefited. How can such a desirable change in the literary atmospheric pressure be brought about?

Fellows of the American Medical Association travel a good deal, and many of them would be ready to address a medical society of the region visited, if they only were sure of being wanted to do so, and knew when and where such society would meet. What is needed is some agency by which a willing speaker and an interested audience can be brought together.

In the past, certain members of the medical profession have done some of this peripatetic teaching or promulgating of their views. But it has not always been the most modest members of the profession or those to whom the distant medical society would be most glad to listen that have put themselves in touch with the officers of societies to proffer such services. The lack of any coordinated plan for the impersonal offering of such services has left the matter in the hands of "pushing," not to say self-advertising writers, and those who are able to get a hearing in medical societies through the activity of personal friends.

Will not some organized body, representative of the American Medical Association, take up the important function of bringing speaker and audience in relation with each other? The Council on Medical Education, now becoming active with regard to graduate teaching of medicine, might invite a number of those who by papers they have published have proved that they can produce what is worth reading or hearing, to notify a central bureau when they expect to travel and could address medical societies in other parts of the country.

On the other hand, such societies as would like to hear colleagues from a distance could keep the central bureau informed of that desire and of the times at which regular or special meetings could be held. Then the societies, kept informed of whom they might secure to address them, could extend a personal invitation to those whom they really desire to hear. With such an assurance that his help is desired by the profession in the city or state to which he is going, many a member would be glad to give his services, who would be very slow to proffer them unasked. The situation is calling for some official body to take cognizance of this need of local societies, and meet it by a proffer of the moderate service required to meet the need.

The need for something of this kind has been forced on my attention in arranging programs for the Denver County and Colorado State Medical Societies.

EDWARD JACKSON, Denver.

USING VARICOSE VEINS FOR INTRAVENOUS INJECTIONS

To the Editor:—In a recent issue of THE JOURNAL (May 31, 1919, p. 1613), Dr. Kaliski, after enumerating the difficulties encountered in finding suitable superficial veins in some subjects and the practical obliteration of veins in others that have been repeatedly injected, advises the use of the superficial jugular vein for the introduction of saline solutions, arsenical preparations or therapeutic serums. It has been my misfortune after repeated efforts in a number of cases to abandon the intravenous route as I was unable to locate the vein successfully. The situation is a trying and embarrassing one, particularly when the patient has been keyed up to the belief in the potency of the intravenous route. No doubt those physicians that have been in a similar predicament will readily sympathize with their equally unfortunate colleagues.

In a large number of intravenous injections of the arsphenamin preparations personally administered, my failures to find the veins have been in women only. All of my male patients have been easily and successfully injected in veins at the bend of the elbow. Therefore the advice of Dr. Kaliski to make use of the superficial jugular veins in those patients in whom other sites are not available is an excellent one. I have had no experience with it, but will take the liberty to submit a method of my own which I have used with success in three cases.

My first case was that of a very obese woman in whom I made several ineffectual attempts to inject an arsenical preparation in the veins at the bend of the elbow. I was about to abandon the administration altogether when I recalled that this particular patient had a number of very prominent varicose veins in the lower extremities. I immediately directed my attention to these and selected one that was quite prominent and apparently free in its entire peripheral course. This vein was injected with the solution without incident. The same patient received two more injections in the same vein. There was no local or general reaction. Subsequently two other patients with poorly developed superficial veins at the elbow and who fortunately possessed varicose veins were readily injected. Of course it is obvious that the success of the procedure depends on the presence of varicosities in the lower extremities and the selection of one that has not suffered thrombotic occlusion from a preexisting phlebitis. As women in the main are prone to varicose veins, these should be made use of for intravenous administration when it is impossible to locate a vein in other localities. I have also found that if the varicose veins are not very prominent they can readily be made so by constricting the site above the vein with the cuff of a blood pressure instrument properly inflated.

CHARLES ROSENHECK, M.D., New York.

Signs of Physical Fitness.—A feeling of being refreshed and recuperated on rising in the morning after a customary night's rest, and a feeling of healthy fatigue as bedtime approaches is a sign of physical fitness. The hangover of fatigue in the morning, experienced by so many students and teachers, should be escaped from as fast as possible. On the other hand, a feeling of intellectual keenness and brilliancy in the late evening should be viewed with suspicion. It is an autointoxication of the nerves.—Thomas D. Wood, M.D.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THOMAS G. MORTON'S METATARSALGIA

To the Editor:—Who was Morton of Morton's disease fame? Where can I find a short medical biography and other facts concerning his medical activities?

THOMAS TRUELSEN, M.D., Tampa, Fla.

ANSWER.—Dr. Thomas G. Morton described metatarsalgia in an article published in Philadelphia in 1876 under the title "A Peculiar and Painful Affection of the Fourth Metatarsophalangeal Articulation." A biography appears in THE JOURNAL, May 30, 1903, p. 1521.

Medical Education and State Boards of Registration

HOSPITAL STANDARDIZATION IN TEXAS

The report of a special committee of the Texas State Medical Association, consisting of Drs. A. C. Scott, chairman, Temple; J. E. Thompson, Galveston, and W. B. Thorning, Houston, appears in the *Journal* of that association of June, 1919. The report follows:

We, your committee, after much study and very careful consideration of the subject, recognize the futility of attempting to lay down hard and fast rules governing the standardization of hospitals in Texas.

We therefore offer the following suggestions as constructive criticism with the hope that future communities will be enabled to still further crystallize opinions of hospital boards and eventually bring about that degree of perfection which is so ardently desired by all.

It is probably beyond argument that the hospital with a "closed staff," i. e., a staff composed entirely of recognized specialists in their respective lines, is the ideal; but as this is manifestly impossible in the majority of Texas hospitals, we make the following recommendations:

First, that where a hospital is operated on the method of the "open staff," or, in other words, where it is open to all doctors in its immediate locality, that its board of directors shall appoint a staff, of a workable number, which shall, from a medical point of view, be known as the governing body of the hospital.

Second, that this staff shall divide itself into committees, for the conduct of the several departments of the hospital. In this connection, we suggest:

(*a*) That a comittee of three compose an operating room committee, whose duty it shall be to acquaint themselves with the character and quality of work being done by different operators, and if, in their judgment, this work is of questionable character or quality, it shall be their duty to report same to the board of directors, with the recommendations that the party in question be denied further privileges of the hospital.

(*b*) That a like number constitute a committee on x-ray and general laboratory equipment whose duty shall be to see that adequate facilities are afforded for the investigations necessary for correct diagnoses.

(*c*) A committee should be appointed whose duty shall be to see that all records are kept in a scientific and business-like manner, contain all information pertaining to the welfare of all patients and that all physicians who patronize the hospital shall be required to comply with the regulations regarding the keeping of records.

(*d*) Another committee should have supervision over the duties of interns and see that they receive adequate instructions.

(*e*) Another committee should have the duty of aiding the hospital in providing adequate nursing for patients.

(*f*) In the event of a dissenting voice in any committee, the matter should be submitted to the entire staff, whose final conclusion, by majority vote, should be the recommendation to the board of directors.

(*g*) We further recommend that all privately owned and conducted hospitals desiring classification should possess adequate equipment for scientific work, a complete system of records, a staff in proportion to their capacity and should invite investigations of their claims for recognition.

Wyoming February Examination

Dr. H. E. McCollum, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Moorcroft, Feb. 12-14, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 10, including one osteopath, passed and one, an osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett Medical College		(1915)	88.1
Chicago Hospital College of Med. (1918) 82, 82.7, 84.8, 85.1.			
Jenner Medical College		(1914)	81.2
Kansas City College of Medicine and Surgery		(1918)	76.2
St. Louis College of Physicians and Surgeons		(1917)	74.8
University of Nebraska College of Medicine		(1919)	84.7

Book Notices

ABNORMAL PSYCHOLOGY: INTERPRETATIONS AND INVESTIGATIONS; CONTAINING AN EXPERIMENTAL STUDY OF SLEEP. By Boris Sidis. Experiment to Determine Co-Conscious (Subconscious) Ideation. By Morton Prince. Colored Thinking. By Fraser Harris. Experiments in Psycho-Galvanic Reactions from Co-Conscious (Subconscious) Ideas in a Case of Multiple Personality. By Morton Prince and Frederick Peterson. Rationalization of Every Day Life. By Ernest Jones. Personal Impressions of Sigmund Freud and His Work. By James J. Putnam. Dreams and Their Interpretations as Diagnostic and Therapeutic Aids in Psychopathology. By B. Onuf. The Concention of the Subconscious. By Bernard Hart. And Seven Other Original Articles, Twenty Abstracts, Twelve Book Reviews. Cloth. Price, $3. Pp. 388. Boston: Richard G. Badger.

This is a compilation of monographs, views and abstracts from the *Journal of Abnormal Psychology* for 1908, 1909 and 1910. Boris Sidis has a series of articles in an experimental study of sleep. Two articles on colored thinking by Fraser Harris are especially interesting, presenting a series of clinical reports on individuals who visualize figures, letters, days of the week, months, hours and other time and space conceptions in terms of color. Especially interesting to the reader of today are the personal impressions of Freud and his work by James J. Putnam. Most of the abstracts and practically all of the reviews are now out of date. The book would have been better suited for the average reader if the different articles on the same subject had been collected and printed as monographs rather than in the form of a bound volume of the *Journal of Abnormal Psychology*.

THE CHILD'S UNCONSCIOUS MIND: THE RELATIONS OF PSYCHOANALYSIS TO EDUCATION. A Book for Teachers and Parents. By Wilfrid Lay, Ph.D. Cloth. Price, $2. Pp. 325. New York: Dodd, Mead & Co., 1919.

The title page states that his book is intended for teachers and parents. But it is also of absorbing interest to any one interested in mental development in the light of the newer psychology. How much of the present day speculation regarding the methods of mental growth will remain is difficult to say. That newer methods of study are substituting the clinical for the old speculative and philosophic method is in itself a promise of better things. In the introduction, Lay discusses the point of view, concluding that the deeper knowledge of the nature of the individual, now for the first time available for teachers and parents, takes into consideration the workings of the unconscious mental activity, and that a knowledge of these processes as well as the order and manner in which they appear in the child development is an essential part of the training of all those who have to do with children. The influence and importance of unconscious desires and impulses, the interplay of the conscious and unconscious, the origin of specific thought in the unconscious mind, and the mechanism by which thoughts and impulses come into being are discussed clearly and

interestingly. The relation of the scientific method of study of the unconscious mind to medical research, and the fact that a modern psychology has developed almost entirely through the efforts of neurologists rather than the old school psychologists, are clearly shown. The blunders and shortcomings of present day educational methods, especially in the light of our recent acquired knowledge of mental processes, is made clear as well as the fundamental principles on which real education should be based. To those who have been following the development of knowledge in this field, the book will be a welcome addition. To others, it may come as a surprise, but it will be a beneficial one.

THE ADVENTURE OF LIFE. By Robert W. Mackenna, M.A., M.D. Cloth. Price, $1.25. Pp. 233. New York: The Macmillan Company, 1919.

The author, a physician in the Medical Department of the British Army, endeavors to formulate a scientific interpretation of life. "Begun on a winter night in a little bell-tent in the north of France within sight of the firing line," it was written during the leisure moments of a busy medical officer's life in the midst of the closing year of the great war. Unable to accept the purely materialistic explanation of life, the author holds that the indomitable logic of facts drives one to the conclusion that behind all and above all there is an intelligent and beneficent Mind immanent in nature and in the life of man. The book is written in the hope that it may help to illumine the clouds of perplexity with which many an earnest seeker after the truth finds himself surrounded. The writer believes that the goal of nature is life, the aim of life is the development of intelligence, and the object of intelligence is a knowledge of God.

THE DISABLED SOLDIER. By Douglas C. McMurtrie, Director, Red Cross Institute for Crippled and Disabled Men. With an Introduction by Jeremiah Milbank, Vice-Chairman, Committee of Direction, Red Cross Institute for Crippled and Disabled Men. Cloth. Price, $2. Pp. 232, with illustrations. New York: The Macmillan Company, 1919.

This is an account of the methods used in rehabilitating disabled soldiers who after previous wars would have been condemned to a life of uselessness and pauperism. While much of this work is still in an experimental stage and it remains to be seen how much reconstruction is possible and what are the most effective methods to employ, yet any account of the plans being followed either in this country or abroad for the rehabilitation of crippled or disabled men is of interest. The material has been collected from the Red Cross, the Medical Departments of the Army and Navy, and military and civilian workers in this country and in Europe.

DIET LIST OF THE PRESBYTERIAN HOSPITAL, NEW YORK CITY. Compiled, with Notes, by Herbert S. Carter, A.M., M.D., Consulting Physician to the Lincoln Hospital. Second edition. Cloth. Price, $1.25 net. Pp. 165. Philadelphia: W. B. Saunders, Company, 1919.

This little book of diets contains an excellent and well-rounded list, of particular value for institutions and men who know how to diet patients, but who are, perhaps, too busy to work out what to give them. It is to be regretted that Joslin's summary of Allen's treatment for diabetes is quoted from the early edition of his book and, therefore, omits Joslin's very important modification regarding the reduction of fat intake preliminary to fasting in certain groups of diabetes.

Infant Mortality.—The number of infants under 1 year of age per thousand born alive throughout the birth registration area as a whole was 93.8 in 1917, as against 101 in 1916 and 100 in 1915. This is equivalent to saying that in 1915 and 1916, of every ten infants born alive one died before reaching the age of 1 year, whereas in 1917 the corresponding ratio was a trifle more than 1 in 11. The rate for male infants in 1917, 103.7 per thousand living births, was nearly 25 per cent. greater than that for female infants, which was only 83.3. A minimum of 66.2 per thousand births is shown for infants with mothers born in Denmark, Norway, and Sweden, and a maximum of 172.6 for infants with mothers born in Poland, while for negro children the rate was 148.6.

Medicolegal

Location of Pesthouse by Board of Health

(Birchard et al. v. Board of Health of City of Lansing et al. (Mich.), 169 N. W. R. 901)

The Supreme Court of Michigan reverses a decree that dismissed the bill filed in this case to restrain the maintenance in a residential district of a pesthouse or detention hospital for the treatment of infectious diseases. The court says that the question involved here was the protection of private rights by injunction against a public board authorized and required by the charter of the city to perform certain duties. The board of health was acting under charter provisions of the city, which not only authorized, but made it the duty of the board to locate and maintain such an institution; and it was the opinion of the trial judge that such provisions justified and authorized the board to select the site in question, and there maintain the institution in the absence of arbitrary action in so selecting it, which was not found to exist. There was much testimony tending to show that a pesthouse may be so conducted, and well-regulated ones are, as to cause no actual danger to nearby residents. But substantially all the experts who testified to this effect agreed that their opinion was not shared by the general public, and that the normal person has a horror and dread of a pesthouse, and a fear of infection from proximity to it. The court was not dealing with an emergency caused by an epidemic of an infectious disease. The detention hospital, or pesthouse, here involved, was permanent in character and the injury caused continuous. The court concludes that the provisions of the charter did not vest in the board of health the power to locate a pesthouse in a thickly settled residential district, where, by reason of its location, it would be a nuisance, and where its permanent maintenance would work continuing damage to adjoining and nearby property and would result in the destruction of the home in its comfort and well-being; and that the discretion lodged in the board was a discretion to be exercised by it in determining between different lawful locations.

Operating on Pregnant Woman for Supposed Tumor

(Johns v. Pond (Calif.), 177 Pac. R. 293)

The District Court of Appeal of California, First District, Division 1, affirms a judgment against the defendant, a physician, for damages in an amount not stated, for having, as was alleged, negligently, and without occasion therefor, performed a surgical operation on the plaintiff, a married woman, 22 years old. The court says that the plaintiff alleged in her complaint that the defendant informed her that she had a fallopian tumor, and operated on her for its removal, when in fact the symptoms diagnosed as indicating the presence of a tumor were caused by pregnancy, and five months later she gave birth to a baby weighing 9½ pounds. She testified that when she first called the defendant she told him that she had been having severe pains in her back and head and also in the pelvic region, was having a scanty menstruation for almost a day each month, and informed him that another physician had said he thought she was pregnant five or six weeks. She further testified that at one time after the incision she heard the defendant make a statement, with reference to the operation, in which he said he had made a mistake, as to which last statement by her, and in some other respects, she was corroborated by other witnesses. The defendant testified that in addition to the symptoms related by the plaintiff she told him that she had been having hemorrhages between menstrual periods and suffered some dizziness; that she did not suspect pregnancy; that her condition was nothing like it had been with the first child; that considering the history of the case as related by her she was suffering from a fibroid tumor; that her condition was serious and required the performance of an operation; that the operation consisted of an incision about 2½ inches long, on making which he discovered that she was pregnant

and there was no condition of tumor, whereupon he concluded that she had given him an incorrect history of the case, sewed up, dressed, and bandaged the incision. According to the testimony of several medical witnesses produced by the plaintiff, based on the history of the case as claimed by her to have been furnished to the defendant, he should have kept her under observation for at least six weeks before operating, when he would have discovered the error in his diagnosis. According to the testimony of nine experts called for the defendant, he was justified in making an immediate operation for tumor only in the event of the presence of hemorrhages between regular menstrual periods; otherwise he should have kept the patient under observation and awaited developments.

From a résumé of the evidence, the court thinks it quite clear that, if the jury believed, as it appeared it did, the testimony of the plaintiff as to what she told the defendant relating to the history of her case, then the operation was unnecessary, and the verdict in her favor could not be disturbed.

The plaintiff having closed her case without introducing any expert evidence, the defendant moved for a nonsuit, arguing that the mere statement by him to the plaintiff and her mother that he had made a mistake in diagnosing the plaintiff's case as one of tumor rather than pregnancy was not sufficient to establish negligence, in the absence of testimony that such incorrect diagnosis was arrived at by reason of negligence. Assuming this to be true, it was sufficient that evidence was introduced later in the case which tended to supply this defect, it not appearing that the defendant was prejudiced thereby.

The court committed no error in refusing the defendant's requested instruction that, if there is more than one method of treatment recognized by the medical profession, a physician may adopt either, for the reason that the instruction was substantially given when the court told the jury that if the defendant applied reasonable skill and judgment with ordinary care, he was not liable for any damages or injuries consequent on an honest mistake or error in making a diagnosis, in prescribing treatment, or in determining on an operation; and if what he did appeared to be in accordance with recognized authority and good current practice, a verdict must be found for him. Rehearing denied by supreme court.

Full Release to Employer Available to Physician

(Hooyman v. Reeve (Wis.), 170 N. W. R. 282)

The Supreme Court of Wisconsin, in this action for alleged malpractice, reverses an order that sustained a demurrer by the plaintiff to the defendant's answer setting up as a defense that the plaintiff, in consideration of $3,000 paid to him by his employer, had given the latter a release in full satisfaction and discharge of all claims, accrued or to accrue, in respect to all injuries or injurious results, direct or indirect, arising or to arise from the accident which he had suffered. The court says that it was insisted by counsel for the plaintiff that it appeared from the facts pleaded in defense and demurred to that two separate torts or wrongs were committed, and that settlement for one did not settle the other, and that the principle of release of joint tort-feasors or wrongdoers did not apply. But the rule invoked did not apply in this case. Whether the master and the physician were in a technical sense joint tort-feasors was not material here, because it was clear on the allegations of the answer that all damages sustained by the acts of the master and the defendant physician were settled for and satisfied. The malpractice, if any, contributed to produce the injury settled for and satisfied by the master; hence such cause of action against the defendant was compensated for and extinguished by the settlement made. Clearly the settlement covered all damages sustained, including injury caused by the alleged malpractice. The damages sustained by the acts of the defendant concurred or were connected with the negligence of the master in producing the injury and damages settled for by the master. The receipt given by the plaintiff, which was not questioned, was broad, and showed full settlement for injuries received through the negligence of the master, as well as on account of the alleged malpractice of the defendant. The alleged wrong of the defendant in treating the injury contributed in large part to the injury sustained by the plaintiff. The injury caused by the malpractice would not have occurred but for the original injury, and resulted because of such injury, and was a proximate result thereof. The plaintiff, having been paid for all damages which he sustained, had no cause of action against the defendant physician for the same claim or any part of it.

Society Proceedings

AMERICAN PEDIATRIC SOCIETY

Thirty-First Annual Meeting, held in Atlantic City, N. J., June 16-18, 1919

(Continued from page 140)

Certain Aspects of Cutaneous Hypersensitiveness

DR. E. C. FLEISCHNER, San Francisco: Experimental proof demonstrates that cutaneous hypersensitiveness is not present in sensitized uninfected guinea-pigs. A study of cutaneous hypersensitiveness in the chronic diseases of guinea-pigs, including tuberculosis, abortion disease, rodent paratyphoid and undulant Malta fever, indicates that cutaneous hypersensitiveness is always an indication of the presence of a focus of infection. We find no evidence of its being an indication of immunity. We have been able to demonstrate the similarity of *B. melitensis* infection and that of *B. abortus* in guinea-pigs, the evidence being based on pathogenicity, apparently identical microscopic findings and gross changes involving the viscera, cutaneous hypersensitiveness, and some evidence of a positive serologic relationship. We have never been able to demonstrate that hypersensitiveness was developed in the offspring. Dr. Theobald Smith has looked over the microscopic specimens, and states that the lesions in the spleen, lymph nodes, and liver of animals infected with *B. melitensis* are absolutely indistinguishable from those of abortion disease.

Quarantine and Disinfection in Scarlet Fever

DR. J. CLAXTON GITTINGS, Philadelphia: In U. S. Army General Hospital No. 9 it was possible to secure absolute lack of contact between patients and the healthy, except in the inevitable instances in which orders were not obeyed. In one case that developed in an attendant, the agency of an infected blanket was strongly suggested. A uniform minimum length of quarantine of forty-two days from the day of entry into the camp hospital was enforced. On the fortieth day, each patient was carefully examined. All those who showed any evidence of abnormality in the throat, nose or ears were inspected by the nose and throat specialist, who decided whether or not the patients gave any evidence of being potential carriers of the disease. At the end of the quarantine period, 59 per cent. of the patients were ready for discharge; 41 per cent. required more or less treatment. At the conclusion of quarantine, each patient was given an orthodox bath, shampoo and change of clothing, and was then transferred to a clean ward in another part of the building. All soiled linen was soaked in a 2 per cent. solution of cresol for two hours or longer before being sent to the laundry. Shoes, hats and leather belts were exposed to formaldehyd in sealed closets for twenty-four hours. Blankets and woolen clothing were sterilized in the autoclave. The floors of the wards and halls were mopped freely with a 2 per cent. solution of cresol, and all flat surfaces were wiped with the same solution. Mattresses and pillows were aired for three days with all windows open. Within two weeks the wards were again occupied, and there were no further cases of scarlet fever for a period of nearly a year. Until the infecting organism of scarlet fever is demonstrated, the proper length of quarantine always will be open to argument. In accounting for the spread of this disease, the chronic carrier would seem to be the most likely agent. *A priori*, the unhealthy nasopharynx and throat may be under

the suspicion of harboring the infection. Examination by a throat specialist may enable us to prevent the discharge of the potential carrier and possibly to hasten the discharge of the healthy person. In mild cases with healthy throats, thirty-five days or less may cover the danger period. It is much better to err on the side of safety than to run the risk of a premature discharge. The factor of the human carrier in the etiology of contagious disease is being accepted to such extent as to make it extremely questionable whether any measure other than thorough cleansing is necessary after infection. Formaldehyd in proper concentration and with sufficient moisture probably will destroy the organism of scarlet fever; that this optimum result is obtained is extremely doubtful. Disinfection of linen and woolens and disinfection and removal of the dust which accumulates on floors and furniture, followed by thorough sunning and airing, appear to be the actual requirements for safety.

DISCUSSION

DR. D. J. MILTON MILLER, Atlantic City, N. J.: There are those who believe that the desquamation from the epidermis in scarlet fever is not contagious, and if that is the case what is to be our belief in reference to quarantine? When desquamation continues indefinitely, of course, we cannot continue to keep the patient in quarantine indefinitely; on the other hand, catarrhal symptoms often disappear in a mild case after the acute stage of the disease is past, so that the duration of catarrhal symptoms cannot serve as a guide to the period of quarantine. Until we have more definite information, desquamation should continue to determine the period of quarantine, and quarantine should be continued until desquamation is complete.

DR. J. P. CROZER GRIFFITH, Philadelphia: I do not think that desquamation is a criterion as to the period of time during which scarlet fever is contagious. I can cite a number of instances in which it had continued for a longer period than forty-two days. It must also be remembered that there are other skin diseases besides scarlet fever in which desquamation may occur, and such diseases may exist coincidentally with scarlet fever.

DR. HENRY HEIMAN, New York: I am glad we are getting away from the superstition that scarlet fever is carried by clothing. To acquire the disease one must come in contact with a person who has the disease or with a carrier. The disease is conveyed more easily by a person ill with the infection than by a healthy carrier of the disease.

DR. J. H. MASON KNOX, Baltimore: I should like to ask if any one has data to show how long scarlet fever patients continue to have sore throats. The sore throat appears before the eruption, and I have seen epidemics started by early cases before the eruption appeared. Where there is any suspicion of the possibility of scarlet fever, it is more important to isolate the patient early in the course of the disease than later.

DR. J. C. GITTINGS, Philadelphia: While thirty days' quarantine in scarlet fever may perhaps be sufficient, six weeks was required in the camps. If a child or a susceptible person is likely to come into contact with a person just convalescent from scarlet fever, it is better to err on the side of safety and maintain quarantine for six weeks.

Cholesterol Metabolism of Infants

DRS. K. D. BLACKFAN and J. L. GAMBLE, Baltimore: Cholesterol, which is an important constituent of tissue cells, may also bear important relations to certain physiologic processes. Cholesterol or substances nearly identical with it are present in all natural foods. If cholesterol is not synthesized in the body, an adequate amount must be provided in the food in order to maintain the chemical structure of the tissue cells and provide for growth. In the food of an infant the amount of cholesterol is roughly proportional to the amount of fat present. No coprosterol was detected in the stools of infants. Apparently none of the cholesterol excreted by the infant underwent reduction in the intestinal tract. This fact made it possible to study the cholesterol balance in infants. It was assumed that the finding of a consistently negative cholesterol balance in normal gaining infants would indicate cholesterol synthesis. In order to determine with accuracy the cholesterol content of milk and stools, it had been necessary to modify considerably an existing colorometric method. The cholesterol balance of several infants has been determined. With one exception, a large negative balance was found. The results so far obtained suggest that cholesterol is synthesized within the body. The relation of cholesterol to maintenance and growth apparently do not depend on the amount of cholesterol in the food.

Certain Nutritional Disorders in Infants Associated with a Proteolytic Intestinal Flora

DR. LANGLEY PORTER, San Francisco: Investigation of many stools evacuated by healthy infants and children showed that there is a standard flora in the intestines of healthy babies and children. Examination of stools of children suffering from different types of nutritional disorders demonstrated that in such cases the flora in the intestine departed from the normal. The normal stool showed a flora composed almost equally of aciduric and protein-splitting organisms. In the nutritional disorders studied, the flora all showed a predominance of proteolytic types of bacteria. These children all showed clinical disturbances evidenced by symptoms of toxemia. They all responded to limitation of milk, meat and egg white, together with a diet high in lactose and dextrins, by a swing of the intestinal flora to a predominance of preventive forms. Coincidentally with this change there was an amelioration of the clinical symptoms. On a rational diet, well-being has been maintained and the stools have remained at a floral balance approaching the normal. No claim is made to having established an etiologic relationship between alimentary intoxications and the flora of the intestine, but our investigations point to the possibility of such a relationship, and to the need of further and more intensive investigation.

DISCUSSION

DR. HENRY KOPLIK, New York: Without wishing to criticize the milk which Dr. Porter used, I wish to point out that a great deal depends on how protein milk is made. Unless it is made properly it rather hurts the baby and may cause bloody diarrhea. Finkelstein realized how important it was to have the milk properly prepared, and he installed his own apparatus. Again, milk may be stored too long before being prepared, and here we are in the hands of the purveyors of milk. In cases such as Dr. Porter described I have been accustomed to eliminate the sugar from the diet. Dr. Porter gave lemonade, while I eliminate all sour foods. However, Dr. Koplik has obtained good results by following his method, and I obtain good results with mine.

DR. E. C. FLEISCHNER, San Francisco: Any method which offers us some criterion on which to base feeding of the type of infants Dr. Porter described is acceptable. It is better to have a method based on a logical foundation than to proceed in an empiric way. Where butyric acid fermentation is concerned it is better to leave the fat out of the diet, and I think that is the method Dr. Porter has followed. If the etiologic factor is the proteolytic anaerobes, as it frequently is, then to get at the root of the evil the protein element must be considered and both fats and proteins must be reduced or eliminated, at least temporarily. Dr. Porter has offered us a tangible basis on which to feed this type of patients.

DR. LANGLEY PORTER, San Francisco: Any one who has studied the subject must have been struck by the fact that we cannot feed high fats when the protein is low, as is shown by the soapy stools that resulted when we followed this method; that was the reason Finkelstein resorted to the albumin milk.

Transfusion in Infants and Children

DR. HENRY KOPLIK, New York: Transfusion in the newborn is applicable in (1) cases of uncontrollable hemorrhage from wounds, umbilicus or scalp hematoma; (2) forms of frank melena with hemorrhage from the intestine and subacute or gastric hemorrhages; (3) concealed melena in which the outward objective signs of hemorrhage are slight, such as occasional ecchymosis on the surface but in which the evidence of internal hemorrhage is great, and (4) cases of

severe and continued hemorrhage in the new-born from surgical wounds, such as circumcision. There are before us two methods of transfusion from which to choose, and the time is scarcely ripe to decide in favor of either. These methods are the Unger and syringe method (Lindemann) and the so-called citrate method (Lewisohn). I have used both methods and found them applicable. Cases have come under my observation in which the subcutaneous injection of serum had absolutely failed to control hemorrhage, or even the subcutaneous introduction of whole blood. In these cases, a single definite transfusion succeeded in combating symptoms which the serum and subcutaneous injection of blood failed to control. Temperature elevation is not a contraindication to transfusion, nor is congenital syphilis. In hemophilia in late infancy and childhood, transfusion was uniformly successful in combating the hemorrhages even when large amounts of blood had been lost. In a case of pernicious anemia, a very rare condition in childhood, two transfusions of 140 and 120 c.c. of citrated blood initiated an improvement, and the child went on to recovery. Transfusion is useful in acute diseases with a tendency to hemorrhage. Acute and chronic leukemia are not benefited permanently by transfusion, and purpuric conditions of all varieties are not improved by transfusion. Henoch's purpura is particularly rebellious to treatment. In several patients who had a low temperature with endocarditis crises due to an infectious endocarditis, transfusion was employed without success. There was one form of streptococcus invasion which if transfused intensively and repeatedly might improve after the introduction of new blood, and this was the form of blood sepsis which did not affect the heart itself. In certain septic infections it was advisable to remove blood in order to make way for the introduction of new blood. In a case of influenzal nephritis I employed blood transfusion when the patient was sinking fast and the urine showed the presence of blood. Not only did the transfusion of blood in this case cause a cessation of the bleeding, but there was complete recovery from the nephritis. On the other hand, many patients with the same affection were transfused without success, possibly because the physician waited too long. There should be a definite idea or indication for the performance of transfusion, since its indiscriminate use may bring the whole method into disrepute.

Postinfluenzal Encephalitis

DR. HENRY HEIMAN, New York: From a study of the relations of this condition to influenza, I am of the opinion that the most appropriate designation is "postinfluenzal encephalitis." We have been able to differentiate three main forms depending on the severity and the most prominent symptoms. These may be grouped into (1) irritable, (2) lethargic and (3) lethargic with paralysis. The irritable type is characterized by marked restlessness, excitability, and almost continuous crying. In the lethargic type, as the name implies, the most prevalent feature is a drowsy state. The facial features are expressionless, resembling the Parkinson syndrome. There may be convulsions or twitching of the face muscles. There is frequently moderate rigidity of the neck. Most of the cases fall into the third group of lethargy with paralyses. In this type we find, in addition to the stuporous state, some form of paralysis and frequently convulsions. There may be an involvement of the extremities or cranial nerve palsies. All of these cases gave a history of previous influenzal infection. In one child the nervous syndrome followed immediately, and in another as long as four months had elapsed. The average was about two weeks. Convulsions were the first manifestation in three cases, stupor in four. Drowsiness and stupor continued as prominent symptoms throughout the course of the disease. Fever played a small part in all the cases. The fundi were examined in all these cases, but showed nothing characteristic. Of eight specimens of cerebrospinal fluid, only one showed definite changes. There were 80 cells per cubic centimeter, albumin was present, and there was a definite reaction to Fehling's solution. There were no uniform changes in the blood picture. The prognosis was better than the alarming state of the patient would indicate. There was no specific therapy. In the irritable type, mixed bromids and chloral were of some value. Lumbar puncture had not proved of special benefit.

DISCUSSION

DR. HENRY KOPLIK, New York: We all saw cases of this kind throughout the epidemic of influenza in New York. These cases were quite similar to the cases of poliomyelitis that have been described on both sides of the Atlantic. They appear to be of the hemorrhagic type affecting the brain and not the cord. There are ophthalmoplegia, facial paralysis, a rigid neck, and Macewen's and Kernig's signs, all being quite marked. The lethargic cases may resemble tuberculous meningitis, and some physicians have made the diagnosis of tuberculous meningitis to find that at the end of a week or ten days the patients were on the road to recovery. We have performed lumbar puncture in some cases of this type, but find that the patients do well without resorting to this procedure. There were different types of encephalitis following influenza; not all were of the lethargic type.

DR. I. A. ABT, Chicago: Not all the cases of encephalitis which we have been seeing are necessarily due to influenza. Encephalitis may follow pneumonia, typhoid or whooping cough. Encephalitis includes a group of diseases. The disease has a selectivity for certain portions of the brain. In a number of cases the anterior motor areas were affected, and in some there is a one-sided paralysis. The prognosis is good so far as life is concerned, but a number of those affected remain paralyzed.

DR. RICHARD M. SMITH, Boston: In one case of encephalitis in a child 4½ months old, all the symptoms mentioned were present, and in addition the child was still unable to cry after the condition had lasted a week.

DR. FRITZ B. TALBOT, Boston: Have you had any reports from adults as to whether double vision was among the early symptoms in encephalitis following influenza?

DR. HENRY HEIMAN, New York: I have not seen diplopia, but I have seen ophthalmoplegia.

Cause of a Sporadic Case of Cerebrospinal Meningitis

DR. HENRY L. K. SHAW, Albany, N. Y.: An infant on a farm developed cerebrospinal meningitis. There was no record of any previous cases in this locality, and the case was definitely traced to a soldier who had visited the home and fondled the child, January 28. The soldier said that to his knowledge he had never seen or been in contact with, or known of a case of meningitis in his regiment. He was found to be a meningococcus carrier. Nasal cultures from all other persons who visited the farm were negative. June 10, the organism still persisted, though the man had been under treatment and had used irrigations of all kinds.

As the disposition of carriers is very largely a public health measure, a questionnaire was sent to the various state departments of health in order to ascertain their mode of procedure regarding carriers of meningitis. The answers revealed very little uniformity in the isolation of patients and in dealing with carriers. There were no provisions for the detection of healthy carriers and the compulsory bacteriologic examination of contact. Public health legislation on this subject is imperative if we are going to limit the spread of communicable disease. It is the duty of the pediatrician to keep abreast of public health progress and to assist in educating our communities in the new order of things.

DISCUSSION

DR. FRITZ B. TALBOT, Boston: Dr. Shaw's report is important and timely, and serves to bring out the susceptibility of the young. The practice in the army in Europe when they found a carrier was to send him to a place where there was below a certain number of carriers, and in that way they diluted the quantity of infection. If the infection was sufficiently diluted, an epidemic did not result. Dr. Shaw's case is very suggestive of what would happen if that plan were tried in civil life.

DR. L. EMMETT HOLT, New York: I can cite a case which parallels Dr. Shaw's. In this instance the husband, who brought the disease to his wife, was advised to take a long

sea voyage. He was gone several months, but when he returned he was still a carrier of the disease. After treatment by a skilled nose and throat specialist, he was freed from the organisms. It is important that we recognize the fact that thousands of returned soldiers are distributed through the community and that undoubtedly a number of them are carriers of disease, and as a consequence we are likely to see many of these cases cropping up.

DR. HENRY KOPLIK, New York: I also have observed an instance almost exactly like that described by Dr. Shaw.

DR. HENRY HEIMAN, New York: A case has been reported of a child, 6 weeks old, that had never left home and was in the hands of a nurse, but nevertheless contracted meningitis and died. It is our practice to make two nose and throat cultures of those who have come in contact with cases of cerebrospinal meningitis, so that we can label the carriers. That is about as much as we can do for them, as it is very difficult to get rid of the organisms. My attention has recently been drawn to another condition that is being brought back by the soldiers, and that is trench mouth.

(To be continued)

AMERICAN SURGICAL ASSOCIATION

Fortieth Annual Meeting, held at Atlantic City, N. J., June 16-18, 1919

The President, DR. LEWIS S. PILCHER, in the Chair

General Considerations as to the Treatment of War Wounds

DR. ANTOINE DEPAGE, Brussels, Belgium: The majority of war wounds are infected or, at least, contaminated. In consequence of this, débridement became a formal indication of the first rank. Our procedure is as follows: On admission of the patient, the injured region is shaved, and then washed with a neutral solution of sodium oleate. Débridement and épluchage of the wound are practiced immediately thereafter. At the same time the Carrel tubes are introduced to the bottom of the wound so as to permit the irrigation of the entire wound surface. To the entire surroundings of the wound are applied compresses smeared with petrolatum in order to prevent irritation of the skin. The wound is dressed with compresses of absorbent material. After the return of the patient to bed, the Carrel tubes are connected with the receptacle containing the surgical solution of chlorinated soda, and irrigation is carried on every two hours, controlled by a simple pressure forceps of Mohr. The dressings are renewed every day, careful lavage of the wound being made with sodium oleate. One must not allow the slightest concretion to remain on the skin about the wound lest colonies of microbes be hidden. We were not able, however, to derive from the Carrel method all its benefits until we made a regular determination of the abundance of the micro-organisms in the wound exudates. This bacteriologic control was repeated in the same wound every two days, and tracings were made of the microbic strength. Infected wounds were rendered sterile by the Carrel treatment in from six to eight days. Bacteriologic evolutions in a wound may be considered under the three periods of acute infection, attenuated infection and sterilization. These periods correspond to three periods in the organic reaction of tissues. In deciding the moment of suture we have recognized that: (1) wounds slightly infected by ordinary microbes may be sutured with every chance of success; (2) the presence of staphylococci does not contraindicate suture; (3) the perfringens organism remains enclosed in the wounds only a very short time, but until these microbes disappear it is dangerous to suture; (4) a wound should not be sutured in the presence of even a slight streptococci infection.

To determine better the moment most favorable for suture, we have supplemented the counting of the microbes on the smears subjected to bacteriologic examination by cultures instituted regularly after débridement and before the suture, and conclude that: (*a*) For wounds feebly infected from the first day with ordinary microbes we may proceed to suture when at the second examination the smear yields only one microbe in a visual field. (*b*) For wounds strongly infected by ordinary microbes, we may resort to suture from the moment the curve comes down to one microbe in four fields. (*c*) For streptococcic infection we should never suture, but submit the wound to adequate treatment, preferably that of Carrel, and wait until the streptococci have disappeared, or become sufficiently attenuated to permit primary union. Streptococci vaccination may here render the greatest service. Immediate primary suture may be made immediately after débridement or from two to four days after débridement. Delayed primary suture or early secondary suture is done without refreshing wound surfaces, by simply approximating them. The suture may be made in the course of the granulation of the wound when sterilization is assured. Secondary suture always necessitates the refreshing of the wound surfaces. The objective toward which we direct the surgical treatment of open fractures, apart from the orthopedic treatment, is the transformation of an open fracture into a closed fracture. In joint wounds our results show the superiority of immediate suture after wide arthrotomy, closing of the joint cavity, over any other method of treatment. In wounds of the elbow and shoulder, however, the Carrel treatment followed by secondary suture or by cicatrization by second intention is evidently indicated.

Most Important Factor in Treatment of War Wounds in Civilian Surgery

DR. GEORGE W. CRILE, Cleveland: After four years of intensive study, from the conflict of views regarding the treatment of war wounds, there is emerging a universal recognition of the one agent of successful military surgery—the good surgeon. Thus, our vast experience in traumatic surgery has taught us the same lesson we had already learned in civil surgery, that sound surgery only will bring success. The good surgeon considers the wound as well as the patient; respects the tissues of the anesthetized man as well as of the unanesthetized man; heeds all the defenses and reparative forces of the patient, and is the exponent of no single method, but adapts his methods to the military situation, the possibilities of after-care, the type of transport—seeing clearly the tomorrow of the wound and weighing accurately his chance for success.

Problem of the "Slightly Wounded" in Military and in Civilian Practice

DR. WILLIAM E. LOWER, Cleveland: The great war supplied to medical officers a postgraduate course in organization, transportation, sanitation, hospital construction, management of supplies, treatment of every kind of wound by every variety of method, and in noting what not to do. One of the problems was that presented by the slightly wounded man, the "walking wounded." The tendency in rush periods to leave the slightly wounded to the attention of the less trained men proved a dangerous hazard to the man power of the army and the time factor in the return to the line became of supreme importance. The problem is of equal importance in civilian practice. This is especially true in the smaller manufacturing plants; the larger industries appreciate the value of the time loss of their employees. Many of our hospitals also refer to inexperienced operators the cases of minor injuries. We are all familiar with serious results following inexpert treatment of minor conditions, both in accident work and in the operating theater. The economic loss of time, as well as the too frequent performance of these minor operations under untrained anesthetists, has been too long endured. This association should call attention to the need of proper organization to assure better care for the lesser as well as for the greater injuries, to the minor as well as to the major operations.

What Would Be the Benefit to the Civilian Surgeon of the Experience Gained by Our Military Surgeons in the Recent World War?

DR. EDGAR A. VANDER VEER, Albany, N. Y.: Early in the war the attempt at aseptic technic broke down, fully 85 per cent. of the wounds having suppurated and there being very

many cases of tetanus. The system of treatment of fractures by the allied surgeons revealed great confusion. In the treatment of wounds, army surgeons were obliged to return to antiseptic methods, and the experiments in this direction led some of the British surgeons almost entirely to abandon the use of strong germicidal solutions, finding that sterile water alone kept the wounds in satisfactory condition for healing. While the Carrel-Dakin method accomplished much, it is an expensive, painful and somewhat protracted line of treatment. The antiseptic treatment was employed, however, to a great extent in the third and fourth years of the war. It has been demonstrated that wounds must be handled with great care, and dressed sufficiently often, but not too frequently and with a minimum of distress. An excellent system of transportation was developed, and the short history accompanying the patient has saved much suffering. The standardization of splints in the treatment of fractures has been of great benefit, and their proper application, with the use of tetanus antitoxin has lowered the mortality. I believe that ether and chloroform will continue to be our most reliable anesthetics.

No Flap or Guillotine Amputation: An Unfortunate Resurrection

Dr. John H. Gibbon, Philadelphia: Because of the frequent secondary hemorrhages, the slow healing extending over months, the painful dressings and the numerous secondary operations after the no flap amputation, this method is designated an unfortunate resurrection. The reflected skin flap amputation obviates these complications. The additional time required for making the reflections of the flap occupies only a few minutes and cannot add to the shock. As soon as the wound has become clean, the flaps are ready to cover it; whereas, in the flapless method a second operation or the employment for a number of weeks of some applicance to draw down the skin is necessary, and these in many instances fail. One reason for doing the no flap operation is that it gives a good stump for the wearing of an artificial limb. It is my belief that the reflected skin flap amputation gives exactly the same kind of stump, but gives it earlier and with less pain and less danger. If this is not so, the guillotine must then be employed in civil practice, which procedure I doubt any one would be willing to inaugurate.

DISCUSSION

Dr. John H. Gibbon, Philadelphia: I want to express the obligation which I think every surgeon who has worked in France owes to Dr. Depage. We owe to him more than to any other man what we were able to accomplish in the treatment of war wounds. I have seen no benefit from blood transfusion in acute infection. I have seen transfusion done a number of times in men badly shocked. They would be braced up for three or four hours and then die. I am speaking particularly of men in the advanced hospitals. With reference to the individual reaction of the patient to infection, I saw many wounded in Belgium under the worst conditions of winter, and I saw many wounded in a much pleasanter part of the world in the spring and summer and fall of the next year, and I cannot say that I observed any decided difference in the reaction of the individual patients to infection. While we have been taught that in the treatment of wounds the first operation should be thorough and complete, I do not believe that the use of antiseptics can be eliminated in the sterilization of infected wounds.

Dr. Thomas W. Huntington, San Francisco: I want to emphasize the value of the trained nurse in war surgery. In Italy, where it was first thought that the trained woman nurse could not be placed in hospitals, it came to be the opinion of those in authority that they were helpless without her.

Dr. Alexis V. Moschowitz, New York: In the treatment of wounds the question is not between surgery and the Carrel-Dakin treatment because you all know that the Carrel-Dakin treatment will never take the place of good surgery. It is, however, of wonderful assistance in the treatment of infected wounds. If of these two agencies I could have but one, it would be good surgery by all means; but if I could have good surgery with the Carrel-Dakin treatment, I should feel well equipped.

Dr. Henry H. M. Lyle, New York: We should emphasize the fact that the general employment of nitrous oxid is dangerous, except in the hands of men experienced in its use.

Dr. George E. Brewer, New York: The most important occurrence during the war in the treatment of shock was the organization of the shock team. This consisted of two men expert in the treatment of shock cases, from two to four nurses and the same number of orderlies. Appliances for blood transfusion and other means of stimulation were provided. The teams were installed in every front area hospital, and so far as I know continued until the end of the war.

Dr. Howard Lilienthal, New York: My experience in transfusion in the front area differs from that of Dr. Gibbon in that when a patient had come in who had lost blood, no matter whether or not he was septic, the most powerful influence for his good was the replacement of that blood. There is no doubt about it; it is a matter of mathematics. As to the sepsis, you do not know when you get a septic man how much blood may have been lost before he reaches you. It is my opinion that there is nothing quite so good in profound anemia with sepsis as blood transfusion.

Dr. A. P. C. Ashhurst, Philadelphia: Dr. Depage pointed out in 1915 that if in the first six hours the red blood count fell below 4,000,000, practically all the wounded died unless transfused. It is well to remember war surgery and to learn the full truth about it.

Treatment of Recent Wounds of Knee Joint

Drs. Eugene H. Pool, New York, and John H. Jopson, Philadelphia: The principles of treatments may be summarized as follows: Complete débridement of the tract of the projectile through the soft parts and bone; removal of foreign bodies; thorough irrigation of the joint; distention of the joint with ether; absolute closure of the joint by suture; primary or delayed closure of the superficial parts according to the rules laid down for primary suture of the soft parts alone; finally, early active motion. In extensive involvement of the articular surfaces an effort should be made to save the joint, provided the conservable articular surfaces and soft parts are sufficient to warrant the hope of a useful joint. It must be remembered that stability in the knee is essential. When the joint cannot be saved, the question of extensive resection and amputation must be weighed carefully. Early active mobilization is the rule. With suspicion of infection, aspiration should be done at once and a culture made. In suppurative arthritis the important feature is early drainage, which is best instituted by lateral incisions well back, though occasionally an incision elsewhere may be employed. No drains should be used. Splints are dispensed with or arranged for support without joint fixation. Free mobility every two hours so that the active movements evacuate the joint should be enforced. Early, nonvirulent infections with little or no bone involvement usually do well.

The Willems Treatment in Knee Joint War Injuries

Dr. Clarence A. McWilliams, New York, and Dr. William B. Hetzell, Pittsburgh: The plea is made that the old immobilization treatment be discarded for the Willems immediate, continuous, active mobilization procedure. In thirty-two of eighty-two cases no fracture was present; in eight there were simple fractures, while in the remaining forty there were combinations of comminuted fractures, eighteen of the patellae, twenty-nine of the femora, twelve of the tibiae and one of the fibula. Fifty-seven cases, or 78 per cent., remained clean. In seventy of seventy-six cases the synovial membrane was completely closed, while in twenty-six the external tissues leading down to the closed capsules were left open. In six only were the joints drained. In thirty-six of the clean cases, only nine patients had perfect function finally; three joints were ankylosed, while in twenty-four there were varying degrees of motion. Of these seventy-three cases, sixteen became infected, of which four finally became ankylosed; one joint was resected; three patients had amputations; four died of the infections; one had flexion of 90 degrees, while the results in three cases are unknown. Compared with these melancholy results of immobilization, Willems gives the following statistics in the

final outcome of 100 consecutive knee cases, 18 of which became infected. There were no deaths and no amputations; there were one resection and two stiff joints.

Transthoracic Laparotomy

Dr. Willy Meyer, New York: In cases of injury, operating by way of the chest to reach organs in the vault of the diaphragm, it has been found best to attend first to the damage wrought in the chest and then try to reach and deal with the injured abdominal organs by a transthoracic laparotomy, either by deliberately incising the diaphragm or by enlarging the wound in it. Sauerbruch reports three operations successful, in all of which a differential air pressure apparatus was employed. He lays stress on the importance of incising the diaphragm transversely or obliquely to the direction of its fibers, not parallel, in order to avoid injury to the phrenic nerve. From my own experience and from the literature I believe that bullets in thoracic as well as abdominal organs are probably best removed; that the question of whether operation should be done immediately after the accident or later depends on the seriousness of the concomitant symptoms, and that simultaneous injuries to chest and abdomen, as also injuries to the convexity of the liver or the spleen, without previous penetration of the chest, if not accessible from below, render the indication for transthoracic laparotomy. Involvement of intra-abdominal organs can be determined before or during thoracotomy. These operations are best done with the help of some differential pressure apparatus. I further believe airtight and watertight drainage of the chest (Kenyon's) to be the safest procedure for the after-treatment.

Treatment of Gunshot Wounds of Chest

Dr. Ellsworth Eliot, Jr., New York: The treatment of gunshot wounds of the chest is either conservative or radical; the former is almost always the rule in civil practice; the latter is occasionally justifiable for overcoming infection, especially in the chest wall. It should be emphasized that this dreadful complication becomes less frequent as the lung is approached and is uncommon in wounds of that viscus, even in the presence of hematoma or hemothorax. Whether this is due to the removal of foreign and infectious material from the surface of the projectile as it passes through the chest wall or to the inherent greater resistance of the lung to certain forms of pyogenic infection, or to both factors, is yet to be decided. The result of secondary operation, should infection develop, is much more favorable because of the improvement in the general condition of the patient and the fact that formation of adhesions has limited infection to a segment of the pleural cavity, thereby greatly diminishing the operative risk.

Discussion

Dr. Howard Lilienthal, New York: A developing pneumonia of the opposite lung has been the cause of very bad statistics in gunshot wounds of the chest. Such a pneumonia will come on whether you operate or not. I have seen fatal pneumonia after a perforating machine gun bullet wound in which nothing could be found to kill the patient except the pneumonia of the opposite lung. In making the aspiration I use instead of a needle a fine trocar and cannula to which a rubber bag is attached so that the fluid will siphon out. To prevent a pneumothorax it is only necessary to have the patient, after you have finished the aspiration, by expiration force the lung into contact with the pleura while you have the other end of the tube under water. If at the cessation of the expiration the cannula is withdrawn, the roentgen ray will show little or no pneumothorax whatever, the lung being in absolute contact with the chest wall.

Dr. Ellsworth Eliot, Jr., New York: It was for the prevention of the high mortality in gunshot wounds of the chest that the conservative procedure was followed in every instance, and in no instance during the entire campaign in the evacuation hospital was exploration of the chest made. Our results by the conservative treatment were so uniformly good that we did not regard the radical treatment necessary or advisable.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

July, 1919, 18, No. 1

*Precipitin Reaction in Infant Stools. L. Hektoen and C. G. Grulee, Chicago.—p. 1.
Studies of Mammary Gland from Earliest Appearance Until Pregnancy. J. A. Myers, Minneapolis.—p. 5.
*Bacillus Tuberculosis in Tonsils of Children Clinically Nontuberculous. R. S. Austin, Chicago.—p. 15.
Clothing of Infants in Summer and Winter. L. W. Sauer, Chicago.—p. 21.
*New Stain for Diphtheria Bacillus. R. M. Greenthal, Ann Arbor, Mich.—p. 25.
*Antiscorbutic Property of Fruits. M. H. Givens and H. B. McCluggage, Rochester, N. Y.—p. 30.
Acidotic State of Normal New-Born. M. Seham, Minneapolis.—p. 42.

Precipitin Reaction in Infant Stools.—The technic in the work reported by Hektoen and Grulee was the same as that used by Hektoen, Fantus and Portis, except that tests were made with both antihuman and antibeef serum. One hundred and thirty-three stools of thirty-four newly born infants were examined. Of these, thirty-two stools from nineteen infants gave positive reactions to antihuman serum; two were positive to antibeef serum and one was questionably positive. All stools were examined with both antibeef and antihuman serum. Of the positive reaction to antibeef serum, in the two instances in with a reaction to antibeef serum occurred, and also in one doubtful case, there was no record of cow's milk having been given. The examination in the case of older infants was carried out on 407 stools from forty-eight different infants, varying in age from 5 days to 22 months. Here the reaction to antihuman serum was positive in 115 stools, and to antibeef serum in sixty-three stools. In only fourteen stools were both reactions positive. The tests were made in cases without selection. The infants were fed on albumin milk and mixtures of cow's milk in which the percentage of protein was rather high. In a careful survey of the cases the authors were unable to determine any connection between the type or frequency of stool or the character of the food and the reaction in the stool. The work is being continued with particular reference to tests for casein and also other substances.

Bacillus Tuberculosis in Tonsils of Children Clinically Nontuberculous.—The excised tonsils from forty-five children were examined by Austin for the presence of tuberculosis by means of the inoculation test on guinea-pigs, histologic examination of sections, cultures on Dorsett egg medium and direct smears. In all cases the histologic examinations showed no evidence of tuberculosis, and no tubercle bacilli were demonstrated in any of the cultures or direct smears. The inoculation test yielded a positive result for tuberculosis in only one of the forty-five cases. The bacillus was of the human type. The child was 4 years of age; the father and mother were living and well; there was no evidence of tuberculosis in the past history of the child; a previous admission to the hospital had been for feeding. Otitis and enteritis had developed, but no tuberculosis had been detected and a von Pirquet test had been negative. At the time of removal of the tonsils the child was well developed and well nourished, and had no palpable cervical lymph nodes. The children in this series came from a community where the supply of cow's milk was far less likely to be contaminated with the tubercle bacillus. Furthermore, but two children in the group were from families in which there were cases of tuberculosis, and none of the children gave clinical evidence of tuberculosis. It is stated by Austin that although tuberculosis of the tonsils in children is not rare, yet most of the cases occur when there are tuberculous lesions to be found elsewhere in the body, especially in the cervical lymph nodes. The occurrence of the tubercle bacillus in the tonsils of children without clinical evidence of tuberculosis, however, is not frequent.

New Stain for Diphtheria Bacillus.—The stain used by Greenthal is made as follows: Kresylecht-violet, 0.07 gm.; methylene blue, 0.1 gm.; glacial acetic acid, 3.00 gm.; water, 100 gm. Dissolve the dye in the acetic acid and water solution, and filter. In a drop of water on a cover glass, make a smear of the growth with a platinum wire. Dry gently over a flame. Place one drop of the stain on the cover glass. Allow it to remain for from one to two minutes, and then shake off the excess of stain. Place a drop of water on the cover and make a hanging mount with a well slide. The preparation can be sealed with the excess of the water. The polar granules are purplish red and the cell body is greenish blue. Most of the other organisms stain very lightly, excepting a few strains of cocci. The hanging drop method makes the organisms appear much larger than they do in the ordinary preparation; a single bacillus is easily seen and differentiated from the surrounding organisms. The stain can also be used with the usual slide method. The polar granules by this method are purplish red and the cell body is light blue, and the contrast is a little better. Greenthal says that this stain is the most successful he has used in searching for diphtheria bacilli in a throat smear preparation.

Antiscorbutic Property of Dried Orange Juice.—Evidence is presented by Givens and McClugage to the effect that orange juice can be dried so that it retains a significant amount of antiscorbutic vitamin. The most satisfactory process for drying orange juice is the one in which the temperature of drying is not unduly high and the duration of drying is very short. If the orange juice is submitted to a temperature of from 55 to 60 C. for forty hours or more, a part of the antiscorbutic vitamin is destroyed. The dried orange juice investigated by the authors was active after three months storage. It is suggested that the dried orange juice will serve as a convenient antiscorbutic for use in infant feeding, on polar expeditions, in the navy and for soldiers during the war.

American Journal of Ophthalmology, Chicago

June, 1919, 2, No. 6

Congenital Eye Conditions Affecting Vision Among Troops Examined at Camp Travis, Texas. A. B. Middleton, Pontiac, Ill.—p. 377.
Clinical Observations in Ophthalmic Service at Camp Sevier, S. C. W. E. Kershner, Bath, Me.—p. 389.
Tuberculosis Iridokeratitis; Some Features in Its Pathology. F. T. Tooke, Montreal.—p. 395.
Hereditary Congenital Ptosis; Report of Sixty-Four Cases Conforming to Mendelian Rule of Dominance. H. H. Briggs, Asheville, N. C. —p. 407.
Development of Tonometer. W. McLean, New York.—p. 416.
Fluctuations of Refraction in Developing Cataract. C. Zimmerman, Milwaukee.—p. 420.
Nonoperative Treatment of Senile Cataract. A. S. Green and L. D. Green, San Francisco.—p. 420.
Optotype for Young Children. J. N. Evans, Brooklyn.—p. 423.
Unilateral Optic Neuritis. C. A. Veasley, Spokane.—p. 429.
Differential Mydriasis; Atropin, Cocain and Euphthalmin. G. C. Albright, Iowa City, Iowa.—p. 428.

American Journal of Physiology, Baltimore

June 1, 1919, 49, No. 1

*Quantal Phenomena in Muscle: Methods, with Further Evidence of All-or-none Principle for Skeletal Fiber. F. H. Pratt and J. P. Eisenberger, Buffalo.—p. 1.
*Functional Correlation of Hypophysis and Thyroid. J. A. Larson, San Francisco, Calif.—p. 55.
*Circulation in Shock after Abdominal Injuries. J. Erlanger, R. Gesell and H. S. Gasser, St. Louis.—p. 90.

Quantal Phenomena in Muscle.—A complete account is given by Pratt and Eisenberger of the method for photographically recording the contraction of muscle fibers on excitation with the pore electrode. By the use of the apparatus an experimenter is enabled to watch through a demonstration ocular the movements of the recording mercury globule on the surface of the muscle, while these are being automatically recorded, and at the same time register on the plate, by turning a lever, the actual extent of movement of a secondary coil. Thus the continuity of stimulus variation is shown in a curve coordinate with that which reveals the quantal or discontinuous character of contraction gradients. Full details of principles and construction are shown in drawings, and a number of graphic records are reproduced, illustrating the different phases and capabilities of the method. On these records further and more complete evidence is based with respect to the "all-or-none" behavior of the skeletal muscle cell in simple contraction, tetanus and staircase and fatigue effects; and the significance of latent periods as obtained by the method is briefly discussed. Emphasis is laid on the opportunity for analysis of mechanical effects which the method furnishes, since the continuous gradients can thereby be differentiated readily from the discontinuous—functions which must always tend to confusion or obscurity in gross muscular action.

Functional Correlation of Hypophysis and Thyroid.—Clinical evidence points to hypertrophy of the hypophysis as a result of thyroid deficiency. The literature clearly establishes the fact that removal of either the hypophysis or the thyroid causes definite changes in the structure of the remaining gland. In the cases of thyroidectomy the consensus of opinion is that the hypophysis undergoes hypertrophy. As to which portion enlarges the most—the anterior lobe is indicated wherever a specific region is mentioned. Larson claims that the administration of the anterior lobe of the hypophysis has a very beneficial action on the maintenance and growth of thyroidectomized rats. Aside from the ameliorating effect on the general condition of the animal, life is definitely prolonged. Larson suggests that the beneficial effect might indicate a direct substitution in which the pituitary autocoid takes the place of the thyroid hormone in a compensatory effort to establish normal metabolism. Or the results obtained might be due to a stimulation effect on the total metabolic processes. A definite decision can only be obtained by extensive study of the various factors involved.

Circulation in Shock After Abdominal Injuries.—In an investigation made by Erlanger, Gesell and Gasser the changes in circulation occurring during the development of shock brought on by exposure and manipulation of the tubes are as follows: The arterial pressure at first may be lowered but little, if any. After some time, it may be after some hours, the pressure begins to fall, and this fall continues more or less steadily, though often slowly, until the animal dies. The changes occurring in the systemic venous pressure have been so small that they cannot be regarded as significant, excepting, perhaps in demonstrating that cardiac failure has little, if anything, to do with the failure of the circulation. The portal venous pressure falls continuously, though slowly, during the first two or three hours. It then ceases to fall or actually rises slightly until the arterial pressure has reached a comparatively low level, when the porta pressure again begins to decline. The peripheral resistance, both somatic and splanchnic, at first practically invariably is increased. At about the time the arterial pressure begins to fall, or starts on its steady decline, and also at about the time the portal pressure starts to rise, the peripheral resistance begins to diminish and by the time the arterial pressure has reached the vicinity of 50 mm. Hg, the peripheral resistance practically invariably is below normal. But up to the time of death the vessels and the vasomotor center preserve some residual tone, though slight reactivity. In this respect the findings of Bartlett are completely confirmed. A considerable loss of fluid from the exposed bowel occurs as a result of transudation through the serous surface, and presumably into the tissues also. The capillaries and veins of the intestinal villi are greatly distended and tightly packed with red corpuscles. No positive evidence has been obtained that the efficiency of the heart is impaired during the development of shock. Nevertheless, although the heart is capable of raising the arterial pressure as high as the normal heart can, the authors are inclined to believe that the heart in shock cannot maintain high pressures as long as the normal heart can. The initial changes in the circulation can be explained best on the assumption that the effective blood volume is reduced. The loss of fluid into and through the tissues of the bowel and the sequestration of blood in the intestinal capillaries and venules suggest a mechanism through which a reduction in blood volume might occur.

American Review of Tuberculosis, Baltimore

June, 1919, 3, No. 4

*Lymphatics and Lymph Flow in Human Lung. W. S. Miller, Madison, Wis.—p. 193.
*Rest and Exercise in Treatment of Pulmonary Tuberculosis. H. M. Kinghorn, Saranac Lake, N. Y.—p. 210.
Physical Examination in Diagnosis of Early Pulmonary Tuberculosis. L. Namman.—p. 233.
*Production of Pulmonary Tuberculosis in Guinea-Pigs by Means of Finely Divided Droplets of Sputum. J. B. Rogers, Cincinnati.—p. 238.

Lymphatics and Lymph Flow of Lung.—This description of the lymphatics and of the lymph flow of the lung, according to Miller, represents the results of his studies up to the present time. The normal flow of the lymph in both pleura and lung is toward the hilum. Lymphatics form a rich plexus in the walls of the bronchial tree. They possess occasional valves which open toward the hilum. No lymphatics have been seen in the walls of air spaces beyond the ductuli alveolares. The plexus of lymphatics about the pulmonary artery communicates freely with that in the walls of the bronchial tree. Valves have only been seen near the hilum and they open toward the hilum. The pulmonary veins are surrounded by a plexus of lymphatics. The bronchial plexuses of lymphatics are connected by lymphatics which follow those branches of the pulmonary vein which have their origin from the bronchial tree. No valves have been found in the lymphatics situated within the lobule (secondary lobule) of the lung. There is a rich plexus of lymphatics in the interlobular septums and about those branches of the pulmonary vein which are situated in these septums. Such valves as have been found in the lymphatics about the pulmonary vein have been found in the neighborhood of the hilum and they open toward the hilum. In the pleura there is a rich plexus of lymphatics which is provided with numerous valves. In the collecting trunks leading from this plexus all the valves open toward the hilum. The deep lymphatics and the superficial (pleural) lymphatics are connected by a short vessel which follows that branch of the pulmonary vein which takes its origin from the pleura and passes along the interlobular septum. Between the pleura and the point where the first branch of the pulmonary vein coming from the bronchial tree joins that branch of the pulmonary vein situated in the interlobular septum valves are found in the connecting lymphatics which open toward the pleura. These valves also prevent the flow of the lymph from the pleural lymphatics into the deep lymphatics. The short lymphatic which connects the superficial and the deep lymphatics furnishes a by-path for the lymph in case there is obstruction to its free flow toward the hilum near the entrance of the second branch coming from the bronchial tree into that branch of the pulmonary vein situated in an interlobular septum. No lymphatics unconnected with lymph nodes have been seen leaving the lung.

Rest and Exercise in Treatment of Pulmonary Tuberculosis.—The proper employment of rest, in Kinghorn's opinion, is greater than any other single factor in the modern treatment of pulmonary tuberculosis. Almost all physicians advise their lung patients to take plenty of good food and plenty of fresh air, but there are still many physicians who at the same time advise them to take plenty of exercise. This last advice, if given at the beginning of treatment, Kinghorn points out usually does much harm. When the diagnosis of active pulmonary tuberculosis is made, patients are, of course, suffering from active symptoms. At this time the patient should have no exercise, but should have either the reclining rest treatment, or absolute rest in bed, whichever form of rest treatment is indicated. The physician should remember that there is no other disease accompanied by fever in which he advises his patient to exercise. With all other diseases, when there is fever, he at once puts the patient to bed. He knows that if he does not conserve the patient's strength when fever is present, the course of the disease will be bad. No better example of this is seen than in the cases of typhoid patients who walk around with fever for a considerable time before being put to bed. The same great medical principle of conserving the strength of the patient applies to the patient with pulmonary tuberculosis.

Production of Pulmonary Tuberculosis by Means of Droplets of Sputum.—Twenty healthy guinea-pigs were kept in an atmosphere saturated with a spray consisting of a solution of tuberculosis sputum in sterile water in the proportion of about 1 to 100, for about five minutes. The pigs were then removed, and the mouth and nose thoroughly exposed and swabbed with alcohol. They were then given a complete bath in a 1:5,000 solution of mercuric chlorid. This process was repeated at irregular intervals, usually about seven days, over a period of from six to nine weeks. At the end of this time the pigs were etherized and examined. Rogers found that such an exposure of the nasal passages of guinea-pigs to sprays of finely divided particles of sputum invariably resulted in the development of pulmonary tuberculosis. Other viscera were generally involved, but less uniformly; the mesenteric glands were involved in only 10 per cent. of the cases. On the basis of these findings, Rogers believes, that the probability of bacilli having entered the esophagus and having been swallowed and absorbed from the intestinal mucosa, can practically be discarded. The cervical glands showed tuberculosis changes in 60 per cent. of the cases, and the fact cannot be overlooked that the infection might have entered through the nasal mucous membrane.

Boston Medical and Surgical Journal

July 3, 1919, 181, No. 1

Delayed Infection or Irritation and Concomitant Metabolic Errors. W. A. Lurie, New Orleans.—p. 1.

Bulletin of Johns Hopkins Hospital, Baltimore

July, 1919, 30, No. 341

Development of Johns Hopkins University Medical School and Osler's Advent. H. M. Thomas, Baltimore.—p. 185.
Osler as Chief of a Medical Clinic. L. F. Barker, Baltimore.—p. 189.
Some of the Early Medical Work of Sir William Osler. W. T. Councilman, Baltimore.—p. 193.
Osler as a Pathologist. W. G. MacCullum, Baltimore.—p. 197.
Osler, The Teacher. W. S. Thayer, Baltimore.—p. 198.
Osler and the Student. T. R. Brown, Baltimore.—p. 200.
Osler and Patient. T. McCrae, Philadelphia.—p. 201.
Osler and Tuberculosis Work of Hospital. L. Hamman, Baltimore.—p. 202.
Osler's Influence on Relation of Medicine in Canada and United States. T. B. Fletcher, Baltimore.—p. 204.
Osler as a Citizen and His Relation to Tuberculosis Crusade in Maryland. H. B. Jacobs, Baltimore.—p. 205.
Osler's Influence on Other Medical Schools in Baltimore. His Relation to Medical Profession. E. N. Brush, Baltimore.—p. 208.
Osler's Influence in Building up the Medical and Chirurgical Faculty. H. Woods, Baltimore.—p. 209.
Osler and the Book and Journal Club. J. A. Chatard, Baltimore.—p. 211.
Osler's Influence on the Library of Medical and Chirurgical Faculty of the State of Maryland. M. C. Noyes, Baltimore.—p. 212.
Some Early Reminiscences of William Osler. H. M. Hurd, Baltimore.—p. 213.
Osler as I Knew Him in Philadelphia and in the Hopkins. H. A. Kelly, Baltimore.—p. 215.
Osler as a Bibliophile. T. R. Boggs, Baltimore.—p. 216.
Osler's Literary Style. E. N. Brush, Baltimore.—p. 217.

Journal of Orthopedic Surgery, Boston

July, 1919, 17, No. 7

Readjustment of Changing Conditions. H. P. Galloway, Winnipeg, Can.—p. 395.
*Pott's Disease and Albee's Spinal Graft. G. R. Girdlestone, Oxford, England.—p. 401.
Internal Derangements of Knee Joints. C. F. Painter, U. S. Navy.—p. 416.
*Standardization of Joint Records. J. A. Nutter, Montreal.—p. 423.
Case Recording of Spinal Curves. E. H. Bradford, Boston.—p. 429.
Mesial Triprism. W. J. Merril, Philadelphia.—p. 434.
*Simple Splint for Treatment of Fractures of Clavicle. R. L. Hodge.—p. 439.

Pott's Disease and Bone Graft.—Speaking of the use of the autoplastic intraspinal bone graft, Girdleston says that emphasis must be placed on the preoperative and postoperative treatment; although the operation is in some cases the deciding factor in attaining complete immobilization, and always is most effective in shortening the period of confinement to bed; nevertheless, its success depends on the efficiency of the associated treatment. During this period the operation is added to, but in no way a substitute for, the regular treatment. The graft is only an effective splint when firm bony union is attained. Fifty cases are reported.

Standardization of Joint Records.—Nutter urges that records of joint motion and deformity should be absolutely intelligible, as they are most important in the treatment of the extremities, hence, positions from which measurements are to be taken should be standardized. Diagrams are shown to illustrate the methods advocated by the author.

Splint for Fractures of Clavicle.—Hodge's splint is T shaped. When applied, the cross piece rests as high as possible along and above the superior borders of the scapulae, while the stem extends almost vertically from the body. It is secured in place with bandages. The splint is suitable for both bilateral and unilateral fractures. The fracture is reduced painlessly, and the arms are left free, thus muscular atrophy is avoided. The patient can use the arm on the injured side for any ordinary purposes, such as writing, feeding, etc. Accurate apposition of the fragments of the bone is obtained. Open wounds are easily accessible for treatment without disturbing the apparatus.

Military Surgeon, Washington, D. C.

July, 1919, 45, No. 1

Typhoid Mary. G. A. Soper, U. S. Army.—p. 1.
Resection of Head of Femur in Certain Gunshot Wounds of Hip Region. R. B. Pratt and J. F. Park, U. S. Army.—p. 16.
Ordinance and Its Effects. C. R. Snow, U. S. Army.—p. 22.
Structure and Systematic Relationships of "Iodin Cysts" from Human Feces. C. A. Kofoid, S. I. Kornhauser, U. S. Army and O. Sweezy. —p. 30.
Lecture on Field Hospitals. B. K. Ashford, U. S. Army.—p. 44.
Problems in Control of Infectious Diseases at Replacement Depots. O. G. Brown, U. S. Army.—p. 59.
Gas Warfare—Its Aftermath. J. Catton, U. S. Army.—p. 65.
Blood Transfusion as a Therapeutic Aid in Subacute Sepsis Associated with War Injuries. A. Zingher, U. S. Army.—p. 75.
*Trench Nephritis at British Hospital in France. R. Fitz, U. S. Army. —p. 80.
Susceptibilities of Recruits to Disease. G. Draper, U. S. Army.—p. 99.
Bladder Stutterers (Nocturnal Enuresis). R. L. Hoffman, U. S. Army.—p. 107.

Trench Nephritis at British Hospital in France.—A statistical study of the cases admitted to one hospital during the summer of 1917 was undertaken by Fitz in order to determine (1) the relative frequency of this type of nephritis among the medical casulties; (2) the age of nephritis patients as compared with patients with other medical casualties; (3) whether relatively new and untrained troops were more susceptible to nephritis than older and more seasoned troops, and (4) whether evidences of an epidemic form of the disease could be discovered. From the findings which are tabulated, certain deductions may be drawn: Trench nephritis is a form of acute nephritis of unknown origin occurring among troops. It is characterized by the rapid subsidence of well marked renal dropsy, the frequent presence of bronchitis and dyspnea, the suddenness of onset of uremic manifestations, and rarity of occurrence of inflammatory complications, and by an extraordinarily low mortality. It accounts for about 5 per cent. of the medical admissions to a general war hospital and is strikingly more frequent than acute nephritis in a general civilian hospital. It occurs most commonly among relatively older soldiers who have seen service for short periods of time. It occurs to a less extent among the younger and more seasoned troops. It appears to be pandemic and not limited to any single group or groups of soldiers. The dyspnea is not due to acidosis, though slight acidosis is common. Urea retention is found in the majority of cases, and it is most marked in the severest.

The edema is intimately related to chlorid retention and is independent of high blood pressure, albuminuria, or urea retention. Epileptiform convulsions occur in relatively mild cases without abnormal kidney functions and are not associated with urea retention, oliguria or anuria. Cases complicated by convulsion usually have hypertension of varying degree, and all show more or less chlorid retention. It is possible that the convulsions are not "uremic" in nature, but depend on some circulatory disturbance or cerebral edema. Fever at onset in seven cases suggests an infectious origin, an impression confirmed by the tendency to relapse. Two types of relapse are encountered, one febrile in character and associated with symptoms of trench fever, the other having in addition to fever a definite impairment in renal function. The immediate prognosis of trench nephritis is most accurately obtained by determining the accumulation of urea in the blood and in the urea index. These vary from normal in direct ratio to the patient's condition, tend to approach normal as the albuminuria and hypertension diminish, but are independent of edema and chlorid retention. The ultimate prognosis of the disease is less certain. No relationship is demonstrated between the apparent severity of the disease at onset (as judged by functional tests, physical signs and clinical symptoms) and the length of time necessary for recovery. The indications for treatment depend on the abnormalities in function. As edema is associated with chlorid and water retention, and in the severer cases with urea retention, it is reasonable to restrict fluid intake and to give diets low in chlorid and nitrogen. When the blood urea concentration has become normal and the edema has disappeared, cases should be managed as cases of chronic nephritis and observed carefully until they are well.

Modern Medicine, Chicago

June, 1919, 1, No. 2

Physical Education and National Growth. L. Wood, U. S. Army. —p. 97.
Syllabus of Activities for Protection and Promotion of Nation's Health. S. S. Goldwater, New York.—p. 109.
Opportunities for Industrial Surgeons. R. M. Little, New York.—p. 118.
Health Service, Hammerhill Paper Company. M. Harrison, Erie, Pa. —p. 121.
Health Hazards and Afflictions of Soft Coal Miners. E. B. Hayhurst, Columbus, O.—p. 127.
Education in Industrial Medicine. O. P. Geier, Cincinnati.—p. 133.
Lead Poisoning, Symptoms. R. P. Albaugh, New York.—p. 137.
Typhoid Immunization of Hospital Nurses. H. B. Wood, New York. —p. 140.
Fourth Great Plague. M. K. Clark, New York.—p. 143.
Coordination of Health and Social Agencies. G. T. Palmer, Springfield, Ill.—p. 151.
Occupation Therapy in Civilian Hospitals. G. C. Robinson, St. Louis. —p. 159.
Medical School and Child Welfare. F. B. Sherbon, Lawrence, Kan. —p. 163.
Law for the Doctor; His Liability for Failure to Diagnose Dislocation of Fracture. L. Childs, Indianapolis.—p. 167.

Southern Medical Journal, Birmingham, Ala.

June, 1919, 12, No. 6

Significance of Signs and Symptoms of Heart Disease. P. S. Roy, Washington, D. C.—p. 289.
Diagnosis of Tuberculosis. H. Boswell, Sanatorium, Miss.—p. 292.
Food Conditions and Nutritional Diseases in Europe. Etiology of Pellagra. S. Harris, Birmingham, Ala.—p. 294.
*Studies on Malaria Control. V. Importance of Disinfecting All Cases Treated as Factor in Malaria Control in Locality of Great Prevalence. C. C. Bass, New Orleans.—p. 306.
Report of State Health Officer. W. Welch. Montgomery, Ala.—p. 310.
Surgical Treatment of Tic Douloureux. J. S. Horsely, Richmond, Va. —p. 319.
Abdominal Surgery in Civil and Military Hospitals. G. W. Crile, Cleveland.—p. 323.
Peripheral Nerve Injuries. W. L. Powell, Roanoke, Va.—p. 329.
Bronchoscopic Side Lights on Bronchoscopic Cases. J. W. Jervey, Greenville, S. C.—p. 333.
Standardization of Tonsillectomy. F. D. Sanger, Baltimore.—p. 336.
Mastoiditis Without Involvement of Middle Ear; Complicated by Malaria. L. N. West, Raleigh.—p. 339.

Malaria Control: Disinfecting all Patients Treated.—Bass emphasizes the point that if 20 per cent. of the cases of malaria were disinfected during a given year, it would reduce the cases of relapse that would occur during the following year 20 per cent., which would represent 10 per cent. of the total amount of malaria that would otherwise be expected to occur. Not only would it do that, but it would also reduce the chances of transmission and occurrence of new cases to the same extent, or approximately 10 per cent. of the total number of cases that would otherwise occur. It would appear, therefore, that if all doctors in a given locality disinfected all of their patients by efficient treatment, there would be a reduction of 20 per cent. in the total amount of malaria each year. It would take about four years to reduce the prevalence 50 per cent. if the physicians disinfected all of their malaria patients. The chief causes of failure at the present time are believed to be (*a*) spectacular methods of treatment, (*b*) not

giving patients convincing advice as to the nature of the disease and necessity for proper treatment, and (*c*) not advising efficient treatment.

Surgery, Gynecology and Obstetrics, Chicago

July, 1919, **229**, No. 1

*Tuberculosis of Cervix Uteri; Report of Case. G. A. Moore, Brockton, Mass.—p. 1.
*Choice of Operations on Pituitary Body. C. H. Frazier, Philadelphia.—p. 9.
Surgical Treatment and Prognosis of Empyema Following Influenza. L. Leyva and Dr. Legendre.—p. 11.
*Study of Bladder Function. A. H. Curtiss, Chicago.—p. 24.
*Vesical Diverticulum: Modified Technic of Surgical Attack. N. P. Rathbun, Brooklyn.—p. 28.
*Traumatic Rupture of Normal Spleen. A. M. Wills, Richmond, Va.—p. 33.
*Malignant Leiomyomata (Fibroid). M. S. Proper and B. T. Simpson, Buffalo.—p. 39.
*Clinical Efficiency and Terminology in Cancer of Breast. W. C. MacCarty and H. M. Connor, Rochester, Minn.—p. 44.
*Irritation of Dura. C. C. Rogers, Chicago.—p. 52.
*Surgery of Tendon Transposition with Special Reference to Importance of Tendon Sheath. M. A. Bernstein, Chicago.—p. 55.
Gunshot Fracture of Femur. J. B. Buchbinder, Chicago.—p. 70.
*Intrinsic Triad or Double Hour Glass Stomach. J. Burke, Washington.—p. 75.
*Surgery of External Carotid Artery. W. M. Nicolson, Atlanta, Ga.—p. 77.
New Straight Prostatic Tractor. W. O. Wilder, Baltimore.—p. 80.
Scalpel Sharpening. G. G. Little, Rochester, Minn.—p. 81.
*Prostatectomy Combining Advantages of Suprapubic and Perineal Methods. A. J. Ochsner, Chicago.—p. 84.
Operating Room Technic and After Care of Patients. C. G. Buford, Chicago.—p. 86.
*Use of Automobile Inner Tubes to Provide Lung Exercises and to Make Esmarch Bandages and Tourniquets. C. Smith, St. Louis.—p. 92.
Epinephrin, an Adjunct to and an Antidote for Apothesine. H. C. Hamilton, Detroit.—p. 92.

Tuberculosis of Cervix Uteri.—In Moore's case the disease involved the tubes, fundus and cervix of the uterus. The process was oldest in the tubes where there was caseation in addition to giant cell formation and an accumulation of many endothelial cells. In the uterus and cervix the process was limited to the mucosa and consisted of the formation of fairly numerous miliary tubercles. The underlying muscle tissue was not involved in the slightest degree.

Choice of Method in Operations on Pituitary Body.—The essential difference between the two methods described by Frazier is that in the original, the approach to the sella was extradural, whereas as now practiced, the approach is intradural. This modification introduces a T-shaped incision in the dura with its horizontal limb on a level with the supra-orbital ridge and the vertical limb extending down toward the sella turcica. By this slight change in technic, the frontal lobe is elevated with greater facility and the view of the sella region is very much more satisfactory. Furthermore, the intradural route avoids the necessity of removing the roof of the orbit, a rather tedious step in the original technic.

Study of Bladder Function.—A study of the effects of noncatheterization of the paralyzed bladder was made by Curtiss in the case of twenty-two male rabbits. Extreme distention occurred thirteen times, with spontaneous rupture of the bladder in one instance. Nine showed extensive vesical erosions or ulceration. Back pressure with ureteral and kidney pelvis dilatation was usually present; in six cases this caused wide paths of almost complete destruction of kidney tissue. Bacterial invasion of the urinary tract was demonstrable in ten of the twenty-two animals operated on. These experiments on rabbits indicate that the unrelieved paralyzed bladder offers a twofold menace to health: first, through frequent infection of the urinary tract due to contamination of static urine; second, through back pressure which distends the ureters, seriously interferes with kidney function and damages the kidney tissue. It would appear advisable, therefore, to maintain the paralyzed bladder in a state of freedom from residual urine, thus minimizing the damage of kidney involvement. Observation in surgical cases in military service has convinced Curtiss that postoperative retention in men is quite infrequent as compared with women. It is further probable that the latter develop a higher percentage of infections. Except in instances of bladder paralysis or obstructed outflow, the problem of vesical retention is, therefore, chiefly concerned with the female sex. Curtiss emphasizes that irregularly performed catheterization for retention of urine is unsatisfactory. Carefully managed catheterization of the bladder which fails to empty spontaneously yields excellent results; but the catheter should be passed regularly and often enough to prevent vesical distention, and its use must be persisted in until daily tests show that residual urine is no longer being retained in the bladder.

Exsection of Vesical Diverticulum.—Rathbun urges the removal of the whole diverticulum, not merely its mucous membrane. He does a two-stage operation. In the first stage he stretches the orifice of the diverticulum to provide better drainage and in the second stage, the diverticulum is excised.

Traumatic Rupture of Normal Spleen.—Four cases are cited by Willis. The patients were all males. A blow on the left side of the body in the splenic region caused the rupture, but there was no external evidence of injury of the body; rigidity and tenderness of the abdomen were present. All of the patients had shock following the splenectomy. In each case all the spleens were practically normal in size with short pedicles and without any history of previous disease of the organ. Three of the four patients had agonizing pain in the left shoulder, which was promptly relieved by splenectomy. Three patients were operated on twenty-four hours after the injury. In two of the cases a marked increased leukocytosis persisted after the operation over a period of from two to four weeks. These three patients had a satisfactory convalescence. One patient died eight days after operation. In this case there was a continuous fall in hemoglobin and a decreasing leukocyte count. In the first two cases operation was followed by direct transfusion, with apparently good results. The fourth patient, a child, could not be operated on because of coexistent concussion of the brain.

Malignant Leiomyomas.—Malignant leiomyomas, according to Proper and Simpson, are not infrequent and if a more careful examination of all "fibroids" were made they believe that the statistics reported in the literature would be greatly increased. They report twenty-two cases in which the diagnosis was based on careful microscopic examination.

Terminology in Cancer of Breast.—This paper is based on a study of 2,100 specimens of breasts received for various reasons. The inaccuracy of clinical diagnosis and the necessity and value of microscopic diagnosis are emphasized. MacCarty and Connor urge the adoption of terms which are not only descriptive and correct but which can be used with facility by both the pathologist and the clinician, in other words, a common pathologic language. The basis of such a language is described and terms are proposed.

Irritation of Dura as Cause of Headache.—Rogers is convinced that chronic irritation of the dura is a common cause of headaches. The most frequent irritation in his experience has been the deposit of lime salts in organized extradural or, strictly speaking, subperiosteal blood clots. After the acute hemorrhagic condition subsides the patient may apparently be well for weeks, months, or even years before any localized symptoms manifest themselves. The symptoms are pathognomonic and can be recognized easily. There is usually a history of a previous injury which may have been considered trivial by the patient at the time, and has long been forgotten until headaches appear. They are always localized in a definite area on the skull. The headaches may be constant but more frequently they are paroxysmal. They are exaggerated by bodily and mental fatigue, and are more frequent at night. They are agonizing, of a gnawing, tearing character, and often associated with dizziness and vomiting. The pulse, temperature and respirations may be normal and the blood count negative. During the attacks the cerebration is slow. The attacks may be epileptoid in character, and the patient may be mentally irresponsible for his acts and deeds. It is not uncommon for these people to become heavy drinkers, using profane and most vile language during the seizures. They become adept liars and may resort to petty

thievery. As the attacks become more and more frequent and severe, it is not at all unusual to find these persons declared insane and sent to sanatoriums for treatment. The insanity disappears after the removal of the irritant and the patient becomes normal mentally in his acts and habits. Cases are cited.

Tendon Transposition.—The results of experimental work done in connection with the surgery of tendon transplantation and tendon transposition are detailed by Bernstein. He points out that the function of a surgically transposed tendon separated from its normal surrounding structures is interfered with (1) by disturbances of its nutrition; (2) by mechanical obstructions to its motion, i. e., adhesions; (3) by a change in the nature of its regenerated tissues. The true physiologic method of transferring the function of a tendon to a new insertion is to transpose it with all its necessary peritendinous structures and with the minimum amount of surgical traumatism. The proliferative and infiltrative changes observed by Bernstein when an exposed tendon is transposed directly to a new insertion leads him to believe that these changes are permanent, and although not marked enough to destroy the vitality, they are such as might interfere with the functioning of the tendon. Transposing a tendon to a new insertion stripped of all its surrounding tissues therefore appears to be unphysiologic, because (1) it deprives a tendon of its nourishment and (2) exposes a susceptible tissue to irritation and thence to the formation of adhesions. In a second series of experiments the tendon was transposed through the sheath of another tendon. In this method the tendon sheath is opened and the tendon separated from its surroundings (mesotenon, etc.). Sutures are inserted in the distal end. This forms a more or less thick rough stump. The tendon is now forced through the sheath of the paralyzed tendon. The final results obtained are an improvement on the older methods of transposition. The results are shown by the histologic findings. There are no inflammatory processes between the tendon and the sheath, and no opportunity for the occurrence of adhesions. The epitenon and endotenon remain unimpaired. Such reaction as is observed has very little effect on the functional action of the transposed tendon. This method of transposition also avoids the possibility of fibrosis of the tendon, a condition which was observed in other methods. This fibrosis is a nutritional disturbance of the tendon and is brought about by separating the tendon from its blood supply, the mesotenon and its surrounding connective tissue structures. Bernstein's method of transposing a tendon, preserving its normal anatomic surroundings and obtaining results by which the tendon in its new position fulfils its normal functions is claimed to be the true method of transposing tendons. Bernstein advocates a special method of inserting the sutures, one which avoids fraying or tearing of the end of the tendon.

Intrinsic Trifid or Double Hour Glass Stomach.—Burke reports a case of true intrinsic trilocular stomach due to cicatricial contraction of chronic gastric ulcers which he believes to be the only genuine intrinsic double hour glass stomach on record.

Surgery of External Carotid Artery.—Nicolson claims that in the average hands ligation is a simpler procedure than Crile's compression; that it controls the same area of arterial distribution, and carries less risk of cutting off circulation from the brain. He describes his method of ligation.

Prostatectomy.—In Ochsner's method with the patient in the lithotomy position, a grooved sound is introduced into the urethra down to the perineum. An incision is then made corresponding to the lateral incision formerly practiced in the operation of perineal lithotomy; extending from a point half way down the scrotum and anus, to a point half way between the left tuber ischii and the anus, and extending down into the membranous urethra which is opened at this point sufficiently to admit the point of an old fashioned lithotomy knife. The sound, together with the lithotomy knife, are passed into the bladder, care being taken to carry the sound along the pubic bone to prevent the knife from cutting into the rectum, thus splitting the membranous and prostatic urethra posteriorly. The knife is then withdrawn and the operator's finger is carried through the incision along the sound into the bladder. The finger is now precisely in the same position as it would be if a suprapubic opening had been made, and in this fact, Ochsner says, lies the important advantage of this over the other methods of operation, because beginning from above and entering the capsule of the prostate through the urethra, one is in a position to enucleate the prostate precisely as though the bladder were entered from above through the usual suprapubic incision and the prostate were to be enucleated according to the Freyer method. This step of the operation should be carried out with the utmost care in order not to disturb the bladder or urethra unduly. The index finger of the left hand is then introduced into the neck of the bladder, and the capsule of the prostate is caught by means of fine toothed forceps, one being applied to the right and one to the left, and a drainage tube consisting of an inner tube 1 centimeter in diameter and covered in its middle portion by a second rubber drainage tube just large enough to slip over the first one, is introduced into the bladder, the inner tube extending into the bladder, and the outer tube into the capsule. The double tube prevents collapse, and offers a sufficient amount of resistance to make the tamponing effective for controlling the hemorrhage. The rubber tube is held in place by means of silkworm-gut sutures which pass through the edge of the wound and the outer rubber tube. Two days after the operation the tube and packing are removed.

Use of Automobile Inner Tubes to Provide Lung Exercise.—Smith instructs his empyema patients to blow up an old inner tube from which the valve has been removed. This exercise should be done several times daily after the acute symptoms have passed.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal

June 14, 1919, No. 3050

*Physical State of Blood Serum in Relation to Its Agglutinin and Antibody Content. C. J. Bond.—p. 729.
Two Cases of Lethargic Encephalitis. C. W. J. Brasher, J. R. Caldwell and E. J. Coombe.—p. 733.
*Hypnosis, Suggestion and Dissociation. W. Brown.—p. 734.
*Transvenous Aneurysmorrhaphy. W. Pearson.—p. 736.
Abdominal War Surgery. E. S. Molyneux.—p. 737.
Suggestion for a Health Census. F. H. Morison.—p. 738.

Physical State of Blood Serum in Relation to Its Agglutinin and Antibody Content.—By submitting blood serum and other body fluids to a mechanical process, which includes friction combined with pressure, Bond claims, physical changes can be brought about in these fluids which throw some light on the condition in which hemagglutinins, bacterial agglutinins, complement, complement deviating substances and antibodies exist in the blood serum. They suggest that the blood serum and the body fluids, the secretions and excretions, form a graded series with the blood serum at one end, and the excretions, such as the urine, at the other. The hemagglutinins seem to be present for the most part in a free state in the blood serum, and in a more or less combined form in the transudates and exudates, while in excretions, like the urine, the hemagglutinins when liberated and recovered in the free state are found to have lost their specific character. This is shown by testing the agglutinative capacity of the fractional series of liquors and sediments to the same varieties of washed cells. Not only do the hemagglutinins show marked differences of composition in the different liquors and sediments, but they also vary according to the extent to which the fluid has been submitted to the mechanical fractional process. This is also true of the bacterial agglutinins contained in blood serum, and it has been found possible by these means to increase considerably the agglutinating titre of a blood serum to a given organism while retaining at the same time the specificity of the reaction. This suggests that it may be possible to raise the agglutinating capacity of a serum by a mechanical process in vitro for therapeutic purposes. These observations also show that the complement

deviating factor in positive syphilitic serums passes over along with the hemagglutinins and bacterial agglutinins into the liquor, and is not thrown down with the sediment.

Hypnosis in Treatment of Mutism.—One hundred and twenty-one cases of mutism were treated hypnotically by Brown. Every one of the patients spoke when made to live again through their terrifying experiences. Some of them stammered, but these were a small minority. Brown did not need to give a specific suggestion that they would be able to speak. Cardiovascular and secretory changes (tachycardia, hyperhidrosis, etc.), dependent on disturbances of the sympathetic nervous system, showed alteration under the same method of treatment. Curiously enough, paralysis of the voluntary muscles (apart from those concerned with the voice) diminished less readily than other symptoms. On the other hand, voluntary paralysis cleared up, sometimes quickly, sometimes slowly, under the influence of suggestions and persuasion, without the need of hypnosis.

Transvenous Aneurysmorrhaphy.—The method employed by Pearson to introduce the suture to close the arteriovenous communication is as follows: The needle is first passed through a small portion of the fibrous tissue which binds the vessels together at one end of the communication, on the external aspect (that is, entirely outside the vessels and between the two), and does not penetrate the intima of either vessel; it thus resembles the commencement of the outer row of sutures in a gastrojejunostomy. This stitch is immediately tied and the needle is then passed obliquely from without inward, emerging on the inner surface of the vein close to the extremity of the stoma. The extreme edges of this are then brought together by fine continuous sutures through intima and media until the opposite end is reached, when the needle is again passed out from the lumen of the vein obliquely through its wall and the overlying tissue which binds it to the artery, so as to emerge between the two, when it is secured in a similar manner to the other end. There is no knot projecting in the lumen of either vessel, and if the stitches are placed accurately and drawn taut throughout they do not present in the lumen of either vessel any more than in the case of ordinary through and through stitches which produce eversion of the edges in vascular suture. The closure of the incision in the vein is effected by the method advocated by Carrel.

June 21, 1919, No. 3051.

Feeding of Nations: Study in Applied Physiology. E. H. Sterling. —p. 757.
Significance of Cerebral Cortex. G. E. Smith.—p. 758.
*Osteoplastic Closure of Cavities in Bone. D. J. Marshall.—p. 749.
*Chronic Bony Fistulas. R. A. Stoney.—p. 760.
*Method of Securing Rapid Healing of Bone Sinuses. D. K. M. Henry. —p. 762.
Radical Cure of Femoral Hernia by Inguinal Route. P. P. Cole.—p. 763.
Bacteriologic Qualities of Roof Collected Samples of Rain Water. A. Houston.—p. 766.
*Operative Treatment of Tuberculosis of Larynx. T. Ruedi.—p. 764.

Osteoplastic Closure of Cavities in Bone.—Marshall is convinced that bipp filling of bone cavities is in every case a successful method of treatment provided always that the preparation is thorough. There are types of cases: (A) The larger group—where a sufficient thickness of soft tissues is present to cover the opening—here simple filling is adequate. (B) Where no soft tissues can be placed over the opening which lies flush with the skin: These cases can be treated successfully by covering with a skin and bone flap and filling the cavity with bipp. The advantages are: Less extensive disturbance of tissues than in any other operative procedure for closure of the cavity—no small consideration in war scars. Anatomic restoration of the bone is achieved; strengthening and not weakening results; fresh osteogenetic surfaces are exposed; a good cosmetic result is obtained. The objections are: A foreign body is left in the tissues; but it (*a*) combats infection, (*b*) stimulates osteogenesis, and (*c*) it is removed naturally when these ends have been attained. Sepsis is neutralized by adequate preparation, careful technic and bipp. A plastic bone operation is not to be approached lightly in the presence of the slightest sepsis; but (*a*) the bone used is more vascular than normal; (*b*) the exceedingly vascular bone at muscular insertions can be used; bipp smearing prevents infection.

Chronic Bony Fistulas.—Stoney uses bipp in these cases. The operation must be planned after the results of roentgenray examination are known. If possible the fistulous track should be excised right down to the bone, and the more of the fibrous scar tissue used the better. When the bone is reached, the periosteum should be raised for some distance all round the opening. The whole infected area of the bone should be explored thoroughly and laid open, all sequestrums and foreign bodies should be taken away, all overhanging walls removed by forceps or chisel, until the walls of the cavity in the bone slope gradually to the deepest point. If possible the bony walls should be gouged away till healthy bone is reached, as is shown by free oozing from the cut surface. The whole wound is now dried and swabbed with ether or methylated spirit and packed for a couple of minutes with gauze wrung out of one or other of these liquids. Modified bipp (iodoform, 2; bismuth, 1, and petrolatum, 12) is then rubbed into the walls of the bony cavity, which finally is filled with it. If the cavity is small and regular, and it has been possible to remove its original walls fairly completely, and if there is a good depth of healthy tissue between it and the skin, the wound may be closed in layers, using one or two layers or even more of catgut for the periosteum and muscles, and silk impregnated with bipp for the skin and superficial fascia with a few sutures of fine silkworm gut to obtain good coaptation of the skin edges. Gauze smeared with bipp is placed over the wound and a thick layer of wool and a firm bandage is applied. If all goes well, the dressing need not be changed till the stitches are removed about the tenth day, when the wound will be found fairly healed. Eighty-eight per cent. of cures are claimed.

Method of Securing Rapid Healing of Bone Sinuses.—Immediate success was secured by the Henrys chiefly by instillations every two hours of Daufresne's standardized solution of hypochlorite, after the method of Carrel. Another postoperative treatment which occasionally gave good results was the daily injection of iodoform and bismuth subnitrate suspended in liquid petrolatum used alone or alternately with Carrel instillations.

Operative Treatment of Tuberculosis of Larynx.—Rüedi claims that tuberculosis of the larynx is curable. Spontaneous improvement as well as cure can be observed repeatedly in Davos under the influence of general treatment, but it is denied that improvement in the pulmonary condition has a favorable effect on the laryngeal lesion. In several cases the fresh air cure, as also the usual local conservative treatment, in particular heliotherapy, were in sufficient or ineffectual, notwithstanding improvement in the pulmonary condition. A considerable proportion of these patients could be cured by operation. According to Rüedi operative treatment of tuberculosis of the larynx should be undertaken only in cases in which there is no fever and the pulmonary condition is stationary, exception being made for cases in which urgent symptoms demand interference. The best method is electrocauterization (Mermod-Seibenmann's method) with its broad and deeply destructive radical effect. Only in cases of tuberculosis of the epiglottis did curetting prove itself better than resection or amputation. Operative treatment resulted in cure in a little more than a third of the number of cases followed and checked. The best results (62 per cent. of cures) were obtained in the electrocauterization of the cords. Operative treatment exercised in several cases a very favorable influence on the lungs and on the general condition. The contention that a stay at a high altitude is contraindicated for tuberculosis of the larynx Rüedi claims is wrong. Even in cases of pulmonary tuberculosis complicated by laryngeal tuberculosis a stay in the high mountains is indicated in accordance with modern experience of both. When the altitude has a favorable influence on the pulmonary, without being able to ameliorate the laryngeal lesions, one must employ local treatment by electrocauterization according to Mermod-Seibenmann's method which can bring about a particularly rapid cure under the favorable influence which the climate of the high mountains exerts on the vitality of the organism.

Glasgow Medical Journal

June, 1919, 91, No. 6

Investigation into Phenomena of "Serum Disease": Relation Between Its Various Forms and Proteins of Horse Serum. W. T. G. Davidson.—p. 321. (To be cont'd.)
Treatment of Syphilis. I. Mackenzie.—p. 332. (To be cont'd.)

Japan Medical World

June, 1919, No. 8

Treatment of Scrofula. S. Uyeno.

Lancet, London

June 21, 1919, 1, No. 25

*Treatment of Syphilis. O. T. Dinnick.—p. 1055.
Invalidism Caused by P. U. O. and Trench Fever. D. S. Lewis, A. J. Blake, and M. Foster.—p. 1060.
*Analysis of Symptoms in Cerebrospinal Fever. A. H. Carter and J. T. Boyes.—p. 1065.
Anesthesia for Ophthalmic Operations. C. T. W. Hirsch.—p. 1068.
*Diaphragmatic Hernia; Report of Cases. R. Warren.—p. 1069.
*Results of Bone Grafting Operations in Ununited Fractures of Mandible. A. D. E. Shefford.—p. 1070.
Pseudoparatyphoid Fever. R. Paton.—p. 1071.

Syphilis: When Is the Patient Cured.—Dinnick says that if after an intensive course of arsenical medication and the continuous exhibition of mercury for two years, a patient can show two years' freedom from physical signs of disease, has a persistently negative blood serum, a spinal fluid which shows no variation from normal in either pressure, globulin content, or cellular count, and which gives a negative Wassermann in amounts of 2 c.c.; and if after a period of freedom from treatment these conditions are still present and persist in spite of provocative treatment, it is justifiable, in our present state of knowledge, to presume that the patient is cured. Finally, should this patient subsequently develop a fresh chancre at a site differing from the first, this would be a reinfection. For syphilis does not confer immunity, and the real interpretation of all alleged immunity is that the so-called immune person is an active syphilitic.

Cerebrospinal Fever.—One hundred cases of epidemic meningitis chiefly due to the meningococcus were analyzed by Carter and Boyes. The average age of these patients was 23.05 years. Certain camps, without a necessarily larger body of troops present, furnished a larger number of them, and more fatal cases, spread over the whole period. No satisfactory reason for this is forthcoming. No seasonal or meteorologic condition can be shown to have influenced the incidence or death rate, except that the larger number of cases occurred in the three winter months, December, January and February. No single symptom can be considered pathognomonic of the disease, and even a combination of the principal symptoms may not be positive. A positive bacteriologic finding alone is conclusive. No treatment appears to be so effectual as early continued lumbar puncture and injection of serum. Wherever possible a serum of the particular type affecting the patient is preferred. The most frequent and the most fatal type was Type 2.

Diaphragmatic Hernia.—Of seven cases analyzed by Warren three were the result of gunshot wounds of the chest and abdomen, a fourth had suffered from fractured ribs on both sides in a buffer accident. Of the other three, two were young people, with no history of injury, and probably due to congenital defects; the last case was a female, 68 years of age, with a long history of failing and vomiting, with no history of injury, and so it may also have been of congenital origin. In four cases the opening was about 2 inches in front of the esophageal opening, in the other two the position is not mentioned. In three cases the contents of the hernia were stomach; in two, large gut; in two, small gut. In five cases there were acute obstruction and strangulation, and in one case subacute obstruction of a recurrent type, in one case no obstruction but an associated pyloric ulcer, laparotomy for which led to the discovery of the more rare condition. Diagnosis was only made during a laparotomy done for treatment of the obstruction, or in one case to treat a pyloric ulcer.

Bone-Grafting Operations in Ununited Fractures of Mandible.—According to Munby and Shefford bone-grafting operations give the best results when there are teeth in both fragments, which can then be controlled by a splint. In nine cases of such a nature, all except one were united at the end of ten months, giving 69 per cent. of complete successes. In those cases where there is an absence of teeth in the posterior fragment the operation is only indicated when the pseudoarthrosis is very lax, and marked improvement can be obtained, even if union of the graft is imperfect. Where there is already firm fibrous union causing little or no disability, the operation is not indicated. There were eight such cases in this series; in two cases bony union was obtained; three patients were considerably improved, and two remained in statu quo. Better results are obtained by the use of pedicled grafts than by free grafts. Certain cases where there is a large gap between the fragments are not suitable for a pedicle graft, especially when both ends of the fragments are pointed. In such instances a free graft is preferable. In free grafts the best results are obtained when the graft can be wedged into position and the periosteum stitched with fine catgut. Absence of wound infection is an essential in order to secure satisfactory results.

Medical Journal of Australia

May 10, 1919, 1, No. 19

Tropical Australia and Its Settlement. A. Breinl and W. J. Young.—p. 375.
The Iniquitous Trade Name. S. H. Stroud.—p. 382.
Chemical Testing of Barium Sulphate for Use in Roentgen Ray Diagnosis. H. Priestley and H. G. McQuiggin.—p. 383.
*Myomectomy During Pregnancy. G. Farmer.—p. 384.

Case of Myomectomy During Pregnancy.—Because of intense pain in the right iliac region, Farmer operated on a woman, three months pregnant, for fibroid. The mass was shelled out. A fairly deep crater was left, but the urterine cavity was not exposed. The muscular walls of the crater were closed up by catgut mattress sutures and then the peritoneal cuff was inverted and closed by a continuous Lembert suture of cotton thread. The abdominal wall was closed in the usual way. The growth removed weighed 425 gm. The patient made a perfect recovery and was delivered of a healthy boy.

May 17, 1919, 1, No. 20

Tropical Australia and Its Settlement. A. Breinl and W. J. Young.—p. 395.
Two Cases of Severe Injury to Eye. W. Hoare.—p. 404.

May 31, 1919, 1, No. 22

*Auricular Flutter and Other Cardiac Cases. M. D. Silberberg, Melbourne.—p. 435.
Modern Treatment of Disease and Disorders of Heart. R. R. Stawell, Melbourne.—p. 439.

Auricular Flutter and Other Cardiac Cases.—According to Silberberg, auricular flutter is not uncommon in old people. The persistent, rapid pulse rate, with periods of irregularity and occasionally doubling of the speed from exertion or excitement, should suggest a possible flutter. The electrocardiogram is the surest means of diagnosis. Treatment by digitalis is satisfactory. The electrocardiogram reveals characteristic curves in the hypertrophies. It gives positive evidence of dextrocardia, because the curve is completely reversed in Lead I. In lesions of the branches of the conduction system it gives clear evidence of myocardial degeneration, an important sign with serious outlook. Cases of auricular fibrillation are quoted to show various possibilities and the great value of digitalis therapy.

Sei-I-Kwai Medical Journal, Tokyo

April 10, 1919, 38, No. 4

Antibody Production in Rabbits Following Injection with Pancreatic Ferments. H. Wago.—p. 11.

Archives Médicales Belges, Liége

February, 1919, 72, No. 2

*Plastic Motor Amputations. P. Pellegrini.—p. 113.
*Meningococcus Septicemia. A. Colard.—p. 122.
*Ignored Syphilis. B. Dujardin.—p. 138.
Influenza in Belgian Army. Nolf, Spehl, Colard and Firbot.—p. 149. Cont'n.
Surgery During the War. P. Derache.—p. 168.

Plastic Motor Surgery After Amputation.—Pellegrini has now a record of twenty-seven cases in which he adapted the stump after amputation to ensure more or less volitional control of the prosthesis. The outcome is regarded as a success in all but three cases. He discusses technical points, much the same as in his previous articles abstracted in THE JOURNAL, 71, 1173 and 2029, 1918, and brings the history of kinetic plastics down to date.

Meningococcus Septicemia.—Colard classifies seven different forms of meningococcus septicemia, and then emphasizes the inefficacy of ordinary methods of treating it. The tendency to relapses is pronounced. In one of his cases there were five relapses, the cerebrospinal fluid becoming clear and sterile in the intervals. Septicemia was evident in 25 per cent. of his sixteen cases of epidemic meningitis, and the importance of giving the antiserum by the vein is emphasized by his experience, as also the necessity for supplementing the serotherapy with an autogenous vaccine. His experience in Nolf's service has confirmed the advantages of giving the autogenous vaccine by the vein, beginning with small doses. He injected thus every fourth day 1 c.c. of an autovaccine obtained from a culture killed by heat at 55 C. for half an hour, with addition of 0.5 per cent. of phenol. The initial dose was 50,000 microbes, then 100,000, 200,000 and so on per c.c., progressively increasing if there were no phenomena of a general reaction. This intravenous bacteriotherapy seems to be the necessary complement to serotherapy when the latter alone does not suffice. One of his patients developed a phase of anaphylactic symptoms eight days after an injection of the antiserum but it yielded to epinephrin.

Ignored Syphilis.—Dujardin relates that pupil anomalies first gave the clue in 95 of his 216 cases of ignored syphilis. Anomalies in the reflexes gave the clue in 35; usually the Achilles reflex was the one at fault first, but unequal abdominal reflexes were also instructive. Leukoplakia of the tongue is almost a certain sign of syphilis, but in 28 of 80 cases of leukoplakia elsewhere in mouth or lips, nothing suggesting syphilis could be detected. Dizziness or nervous deafness gave the clue in 5 cases, and laryngeal lesions in 3. Vitiligo and alopecia were found in 4 and 6 cases, mostly with inherited syphilis. Zona of the lower half of the body was generally found associated with a chronic syphilitic meningitis.

Bulletin de l'Académie de Médecine, Paris

May 20, 1919, 81, No. 20

*Filarial Chyluria: Recovery Under Neoarsphenamin. M. Deschamps. —p. 655.
*Arsphenamin Prophylaxis of Syphilis. A. C. Magian.—p. 657.
*Organized Prophylaxis at Paris. Sieur and Marchoux.—p. 678.
*Retention of Chlorids and Urea in Nephritis in Children. P. Nobécourt.—p. 683.
War Radiotherapy. H. Bordier.—p. 688.
Discordance between Subjective and Organic Symptoms with Stomach Disease. L. Pron.—p. 690.

Neo-Arsphenamin in Filarial Chyluria.—Deschamps reports a second case of this kind, the injections of neo-arsphenamin resulting in the disappearance of the filaria from the urine. The urine coagulated in the bladder to such a degree that it clogged the urethra. This was overcome by giving sodium citrate, after which the urine seemed to become more fluid.

Arsphenamin Apparently Wards Off Syphilis.—Darier tells how Dr. Magian, chief of the French hospital at Manchester, inoculated himself, March 21, 1918, in the presence of twenty physicians, with a little serous fluid from a syphilitic chancre. In less than an hour afterward he was given an intravenous injection of 0.6 gm. of arsphenamin. No local or general symptoms of any kind followed, and the Wassermann test applied every month since has been constantly negative.

Organized Prophylaxis at Paris.—Sieur describes the work of the preventoriums against tuberculosis and against venereal diseases in the Paris district during the war, and also the crèches and various other welfare institutions for factory workers and children, all organized by the military medical department.

Retention of Chlorids and Urea in Nephritis in Children.—Nobécourt explains that the different types of nephritis observed in adults are encountered also in children, in both the acute and chronic form. Study of the elimination through the kidneys enables the different phases of the kidney disease to be followed. It shows the different retention at different periods, and explains the brief course in some acute cases and the latent or intermittent character in certain cases. Persisting retention of chlorids or urea, even if slight, is a warning sign. Modification of the diet usually puts an end to the retention; if the edema does not subside, small doses of digitalis or theobromin kept up for five to ten days usually stimulate diuresis. His dose of theobromin is below 0.6 gm. for large children. It loses its efficacy in about a week; if kept up too long, it is liable to bring on or increase albuminuria. In certain acute or chronic cases of nephritis with chloridemia, the edema is irreducible. In 12 cases of acute nephritis there was strong azotemia (1 to 6 gm.) in 5, plus chloridemia in 3; moderate azotemia plus chloridemia in 3, and in the 4 others there was chloridemia but no azotemia. In 10 chronic cases of nephritis the urea was less than 0.5 gm. per liter in 7, while it was from 0.5 gm. to 1 gm. per liter in the others.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 2, 1919, 43, No. 15

*Fatal Poisoning from Contrast Meal. R. Bensaude and E. Antoine. —p. 369.
*The Temperature Range with Unstable Heart. C. Laubry and C. Esmein.—p. 376.
*Tuberculin Tests in Control of Tuberculosis. P. Pruvost.—p. 383.
*Medical Treatment of Purulent Pleurisy. P. Emile-Weil and Loiseleur.—p. 387.
Improved Oscillometer-Sphygmograph. A. Mougeot.—p. 391.

Fatal Poisoning from Barium Salt.—Bensaude and Antoine some time ago extolled the great advantage of barium sulphate as an opaque substance, harmless to man while extremely useful for roentgen work. Bensaude published in 1917 his endorsement of the barium sulphate contrast meal. He now emphasizes that the fatalities which have followed its use are due to the druggist's having blundered and dispensed the carbonate or sulphide in the place of the ordered sulphate. Two fatal cases are described, the patients a woman of 27 and man of 37. The robust woman died ten minutes after ingestion of the suspension of a tablet of 40 gm. of barium polysulphid. The man took 80 or 100 gm. of barium carbonate and vomited part of it the third hour. He was given sodium sulphate and magnesium sulphate which combined with part of the barium salt to form an insoluble compound so that death did not occur until the thirty-fifth hour. A number of other mishaps of the kind are on record, for all of which the pharmacists' blunders were responsible, dispensing the chlorid, sulphid or carbonate of barium in place of the insoluble and stable, harmless, chemically pure barium sulphate.

Persisting Subfebrile State with Unstable Heart.—Summarized in the Paris Letter, p. 1929.

The Intradermal Tuberculin Reaction.—Pruvost reports the repeated application of the intradermal test to eighty-three persons suspected of tuberculosis. The most instructive response was obtained with 0.1 c.c. of a 100,000 or 200,000 dilution of the tuberculin.

Medical Treatment of Purulent Pleurisy.—Weil and Loiseleur expatiate on the advantages of repeated punctures, injection of air, and possibly injection of methylene blue in treatment of purulent pleurisy. Eleven of the twelve patients treated in this way recovered, but seven of them required operative measures finally. The delay did not seem to have done any harm, while it permitted those capable of recovering under medical treatment alone to get a chance to do this. This occurred in two cases of total purulent pleurisy and in four with localized processes. There is no need for operative intervention if the pus forms again very slowly and the amount is found less at each puncture, and the intervals between punctures can be lengthened while the general condition improves to correspond. If the weight increases, this

is a further sign of general improvement. Their medical patients gained from 10 to 25 pounds while the suppuration was gradually subsiding.

Journal de Médecine de Bordeaux

May 25, 1919, 90, No. 10

*Chronic Lamblia Enteritis. J. Carles.—p. 187.
*Bone, Gland and Skin Tuberculosis. A. Chenut.—p. 191.
Surgical Treatment of Purulent Pleurisy. H. C. Schultz de Brun. (New York).—p. 202.
Thymol for Expulsion of Tapeworm. X. Arnozan.—p. 205.

Lambliosis.—Carles emphasizes the chronic and tenacious character of lamblia enteritis. Some of his patients had been treated long for enteroneuroses, insufficiency of the liver, or even intestinal tuberculosis, and the lambliosis had been overlooked. One young man had been affected with this chronic enteritis from early childhood, and it had impeded both physical and mental development. The lamblia may be found in the mucopus from the rectum, but usually it can be discovered only after purging and centrifuging the sieved and homogenized stools. Sulphur has proved most effectual in his experience, from 2 to 6 gm. a day, in three doses, kept up for ten days. By repeating this course every month for a time, recurrence is warded off. Other parasites require their special treatment. Every recurring enteritis should suggest lambliosis.

Treatment of Bone, Gland and Skin Tuberculosis.—Chenut describes the fine results he has obtained with sun baths and sea baths in what used to be called surgical tuberculosis.

Journal de Radiologie et d'Electrologie, Paris

May, 1919, 3, No. 5

*Accessory Focal Spots in Roentgen Tubes. A. Lumière.—p. 193.
*Comparative Value of Roentgen Ray Tubes. H. Guilleminot.—p. 205.
*The Resistance of the Human Body to the Electric Current. A. Strohl.—p. 207.
*Professional Radiodermatitis. P. Aubourg.—p. 217.
Roentgen Examination of the Spine. H. C. Gage.—p. 219.
Roentgen Localization of Sequesters in the Skull. R. Pecker.—p. 222.
Magnet for Extraction of Scraps in the Brain. Costantini and Gosselin.—p. 224.

Accessory Focal Spots for Rays Discharged by Tubes Used in Radiology.—Lumière cites those who have been making a study of the accessory sources of the roentgen rays, and then describes similar research undertaken with the tubes as usually employed in radiology and also with all the sources of the principal or parasite rays discharged by the apparatus producing the roentgen rays. Some of the radiograms were taken with the tube turned completely around, the exposures made through the thin plate of the anticathode, directly opposite to the usual direction of the rays. The roentgenogram was as perfect (with the Muller tube) as when the routine conditions had been exceptionally favorable.

Comparative Tests of Roentgen Tubes.—Guilleminot describes how to compare the sharpness of the images, the total output of rays per current, and the endurance of the tubes. The fluorometer is the main reliance in the tests.

Electrodiagnosis.—Strohl remarks that most of the methods of electrodiagnosis presuppose an invariable resistance on the part of the tissues to the electric current. But this resistance is not invariable. It depends on a number of variable factors, as he explains in detail, with suggestions how to eliminate various causes of error.

Cure of Radiodermatitis with Carbon Dioxid Snow.—Aubourg reports the case of a radiologist who had always used most scrupulously the current means of protection in his thirteen years of roentgen work, even to a doubly protected glove for the left hand. But in 1912 chronic lesions developed on his hands. He kept at his work during the war, often making long exposures in restricted quarters. In two years he had thus aided in extraction of 4,000 foreign bodies. The chronic dermatitis was then treated once a month with carbon dioxid snow, applied for forty seconds at each sitting to one, two or three of the foci. The focus was then treated with bismuth held in place with a gauze bandage. This dressing was left undisturbed for ten or fifteen days. The eschar dropped off the fifteenth to the seventeenth day, and by the end of two months there was not even a trace of a scar. During the entire course of treatment the hands were kept well greased at night with a soothing salve. In thirteen months twenty-three lesions were thus treated and twenty-one subsided smoothly; one started to suppurate but this was at once aborted with magnesium chlorid, according to P. Delbet's technic. One other lesion returned at the end of three months as a wart on the spot that had been treated and had disappeared. This recurring lesion rapidly progressed but was treated and soon healed like the others. There was also a warty growth on the left forearm which looked so suspicious that excision was recommended for this, but it disappeared spontaneously while the other lesions were being treated. One would have to look close now to suspect that the hands were the hands of a radiologist. The carbon dioxid treatment did not interfere with his continuing his work; its efficacy is apparently established by the year and a half that has elapsed since. The case teaches further that the most painstaking care to avoid danger is not always effectual, as we cannot rely implicitly on the protecting devices at our disposal.

Lyon Médical

May, 1919, 128, No. 5

Dysentery and Edema. Martin and Debard.—p. 225. Cont'n.
*Eosinophilia. E. Deglos.—p. 231.
Case of Fatal Gonococcus Septicemia. Lefèbure.—p. 238.
*Pathogenesis of Fever. Widmann.—p. 241.

Eosinophilia.—Deglos comments on the local eosinophil reaction often observed in effusions of traumatic origin and in exudates, subcutaneous or conjunctival, as also the general eosinophil reaction in the blood in various conditions of infections or of purely toxic origin from microbian or parasitic toxins. The reaction seems to be more to the toxins than to the microbes or parasites themselves. The eosinophilia persists long into convalescence and may aid in the retrospective diagnosis in connection with the tracheobronchial gland changes. One patient with severe enteritis and intense anemia had pronounced eosinophilia for which no cause could be discovered until it was casually learned that during his visits home, twice a week, he was subjected to severe carbon monoxid poisoning from a charcoal stove. The cases of eosinophilia hitherto classed as nonsymptomatic are being cleared up by such discoveries, and especially by the research of Weinberg and Seguin reported recently in the *Annales de l'Institut Pasteur*.

Pathogenesis of Fever.—Widmann is now convinced, for reasons which he enumerates, that fever in most cases is a defensive reaction by means of production of sugar to an extent far above normal, plus an intense utilization of the sugar thus elaborated. In every fever the first thing to be done is to ascertain the condition of the liver and to improve its functioning by every means in our power. This should include (1) copious drinking of sweetened beverages while (2) alcoholic drinks should be taken with extreme caution. Another indication (3) that Widmann emphasizes is to make the patient vomit if not too much enfeebled by the malady. And also (4) to give quinin, 10 grains at a time, every three hours until the stools are diarrheic in case of cholera. And finally (5) not to allow him to walk about. The bases for these directions are (1) because sugar given by the mouth reaches the liver, by the portal system, and helps the liver in the production of glycogen; (2) because alcohol, possibly useful at first as a general stimulant and hence a stimulant of the liver, soon displays a paralyzing action on the central nervous system, and this has a grave depressing influence; (3) because emetics have a stimulating action on the liver; (4) because quinin stimulates secretion of bile and probably also the secretion of glycogen, as all of the liver functions seem to be closely connected, and finally (5) because walking about uses up glycogen and throws an extra task of glycogen production on the liver. Typhoid fever is peculiarly dangerous in a diabetic as the liver is already below par. The sugar may disappear from the urine as the fever rises but the patient soon dies. The sugar from the food is transformed into glycogen owing to the intense stimulation of the liver, but this stimulation is more than the diabetic can bear, and he succumbs. The article is to be continued.

Paris Médical

May 24, 1919, 9, No. 21

*Measures for Aiding Tuberculous Ex-Soldiers. L. Bernard.—p. 405.
*Psychic Symptoms with Recent Brain Wounds. P. J. Logre and H. Bouttier.—p. 408.
*Neoarsphenamin in War Surgery. A. Bréchot.—p. 414.
Physiopathology of the Bladder Sphincter. R. Utesu.—p. 416.

Tuberculous Ex-Soldiers.—Bernard reviews the history of what has been done in the past to aid the tuberculous discharged from the army. He refers especially to the work of the Comité départemental of the Seine district founded in 1916 which included children also in its welfare work.

Psychic Reactions to Brain Trauma.—Logre and Bouttier remark that the varied war traumatisms affecting the brains of strong young men induced a special reaction, evidencing the autonomy of traumatic mental pathology and the marked difference between this and all other modes of diffuse psychopathic reaction such as emotions, mania, melancholia, toxic-infectious confusional states, etc. The dissociations induced have a decided diagnostic value and form a guide to treatment, especially in the line of surgical neuropsychiatry. This special pathology determines the remote prognosis by the modifications more or less profound and durable in the entire personality which may be entailed by the diffuse cerebral microtraumatism. The mind gives evidence of mental paresis corresponding to what in the muscles is lax or spastic paralysis, with or without ataxia. There are no hallucinations, no tendency to ataxia; the trouble is in the intelligence and the affections. The anatomic processes responsible for this mental paresis are generally paralleled by changes in the cerebrospinal fluid, an albuminosis with dissociation or inversion of the albumin and cell count. This may subside or last for weeks or months. Toxic-infectious injury of the brain, that is, a chemical lesion of the brain, manifests itself in a set of symptoms of the confusional type. Diffuse traumatic injury of the brain, that is, a mechanical lesion of the brain, manifests itself in the mental processes as a kind of sluggishness in the mind, a mental paresis. An initial loss of consciousness is the rule with this diffuse traumatism from concussion of the brain. When there are localized wounds besides, the set of symptoms from the diffuse concussion and those from the localized trauma should be estimated separately, when they will serve as a guide to treatment, as they explain in detail.

Neo-Arsphenamin in War Surgery.—Bréchot has been giving neo-arsphenamin by the vein after war wounds to ward off or cure septicemia and to aid in the healing of wounds. The action became manifest by the third day and was most marked in acute septicemias without important local lesions; also, in recent and gangrenous infected wounds of soft parts. No benefit was apparent in massive gangrene and advanced suppurative processes. A single intravenous injection of 0.3 gm. neo-arsphenamin was followed by a surprising change for the better when any effect was apparent. Three typical cases are described.

Progrès Médical, Paris

April 19, 1919, 34, No. 16

Refrigeration of Meat and Milk. L. Lortat-Jacob.—p. 149.
*Cancer of the Pancreas. M. Loeper.—p. 151.
*Bone Grafts. Barbier.—p. 153.
Intramuscular Injections of Turpentine. G. Huillet and A. Crémieux.—p. 156.

Cancer of the Pancreas.—Loeper describes the features which distinguish jaundice with cancer of the pancreas from that with gallstones, especially the large dilatation of the gallbladder testifying to complete obstruction of the common bile duct. This is the rule with cancer of the pancreas but is comparatively rare in cholelithiasis. The stools will decide the question by the high content of nontransformed neutral fats, when compression from the pancreas is responsible for the obstruction of the bile duct. When the obstruction is close to the ampulla of Vater, it is impossible to decide before operating, although an increase in amylase in the blood and urine with its absence from the stools is a sign of obliteration of the pancreatic duct, just as the increase of bile salts in blood and urine and their absence from the stools points to obliteration of the biliary passages.

Bone Grafts.—Barbier makes out the balance sheet for bone grafting operations, the outcome showing there is still much uncertainty in regard to the inner physiology of a bone implant. The balance to date seems to be in favor of living bone for the implant. Conditions are entirely different with dead bone from those with dead nerve implants. Further study of the biology of the bone implant will solve these various problems. Heitz-Boyer has reported twenty-five cases of massive bone implants to correct ankylosis. In the eight aseptic cases success was complete in 75 per cent., as also in 69 per cent. of the seventeen cases in which there was more or less infection. The intervention was a failure in only one case; four are too recent for judgment.

April 26, 1919, 34, No. 17

Refrigeration of Meat and Milk in Hospitals. L. Lortat-Jacob.—p. 159.
*Gummatous Sporotrichosis. L. Ramond.—p. 160.
Hot Springs in Treatment of Syphilis. L. Bory.—p. 162.

Sporotrichosis.—Ramond warns that lesions in the form of a gumma in skin, bone or viscus should always suggest the possibility not only of syphilis and tuberculosis but also of sporotrichosis. In a case described, on account of the gummas on the trunk and arms, the man of 57 had been given a course of mercurial treatment but without effect. As intense pains finally developed in the lumbar spine, the diagnosis was changed to tuberculosis, and incipient Pott's disease was suspected. The indolence of the gummas, their rapid development, the absence of fistulas and the arrangement of the gummas along the lymph routes finally corrected the diagnosis to sporotrichosis, confirmed by cultivation of the pus, the macroscopic aspect of the cultures being unmistakable once seen. Agglutination tests, as for typhoid, were still further evidence, sporoagglutination occuring at 1/500 or 1/100. The most conclusive evidence, however, is the rapid retrogression of the lesions under potassium iodid. He gives it by the mouth in a large amount of fluid (beer or Vichy water), beginning with small doses and increasing to a daily dose of 4 gm. Only exceptionally is more than this required, to a maximum of 8 gm. In the case described, the man was unable to bear the iodid by the mouth and it was given by the rectum. When the intolerance is absolute, other iodids should be tried. The earlier this treatment is begun, the more effectual its action, and it should be long continued.

Revue Neurologique, Paris

September-October, 1918, 24, No. 9-10

Cerebellar Seizure. E. Schuhmann and L. Pradal.—p. 57.
Paralyses with Hypothyroidism in Women. J. C. M. Fournier.—p. 62.
Albuminuria After Epileptic Seizure. Papastratigakis.—p. 65.
Postconfusional Dementia Praecox. Hesnard.—p. 68.

Policlinico, Rome

May, 1919, 26, Surgical Section No. 5

*Gastric Tuberculosis. G. Razzaboni.—p. 153.
*Cicatricial Stenosis of Esophagus. A. Austoni.—p. 161. Conc'n.
Obstruction of Bile Duct from Cyst. E. Olivi.—p. 177.

Gastric Tuberculosis.—Razzaboni gives the microscopic findings in a case of tuberculosis of the stomach in a woman of 60, with complete recovery after subtotal gastrectomy. The symptoms from the stomach had first been noted about two years before the operation. The process was of a neoplastic type along with diffuse inflammatory lesions. When last seen, three years and a half later, she was still well.

Cicatricial Stenosis of the Esophagus.—Austoni discusses the indications in cases of this kind and describes four personal cases. He insists that absolutely impermeable stenosis is extremely rare. It is almost invariably possible to work something through it, and when this can be done, no matter how old or how tight the stenosis, a cure can be counted on by gradual dilatation. This offers less risk and is more certain of a cure than by any other measures. The technic is practically the same as for urethral stenosis; if the stenosis is low down it may be advisable to introduce the bougie through an opening into the stomach. In adults, permanent, interrupted progressive dilatation with the aid of a guiding thread is the simplest means of cure. For children, on the other hand, and for stenosis high in the esophagus, it is more convenient to apply instrumental dila-

tation, very slowly and progressively, just as for urethral stenosis, and with the same instruments, but proceeding very gradually, not attempting to spread the branches more than 2 or 3 more millimeters at a sitting. Even with intervals of eight or nine days, the course takes less time than with gradual dilatation with bougies. In the two children whose cases are described there were no complications of any kind, and the esophagus had become amply permeable by the end of three months. He gives a preparation of thiosinamin to aid in softening up the tissues, and the effect impressed him very favorably. He gave it even to children in quite large doses at first, about every fifth day, and later, following each dilatation. Guisez advises against this for fear that with the softening of the tissues the tip of the bougie might go astray, but there is no danger of this if the drug is given only after the dilating procedure.

Anales de la Facultad de Medicina, Montevideo

January-February, 1919, 4, No. 1-2

*Hysteria and Hysteroid Syndrome. A. Austregésilo.—p. 1.
*Roentgen Treatment of Uterine Fibromas. E. A. Weil.—p. 21.
*The Gastric Mask of Liver Colic. J. Soca.—p. 31.
Anatomy of the Peritoneum in the Liver Region. L. Mérola.—p. 61.
General Conceptions of Endocrinology. P. E. Núñez.—p. 69.
*Spontaneous Cytolysis in Cerebrospinal Fluid. J. Bonaba.—p. 111.
*Serodiagnosis of Syphilis. A. Scaltritti.—p. 125.

Hysteroid Syndrome.—Austregésilo remarks that up to twelve years ago every case of more or less systematized delirium, with ideas of persecution or grandeur was labeled paranoia. But now we classify them as paranoid dementia, etc., and he insists that the same should be done for hysteria. We must classify the cases presenting true hysteria and cases with symptoms resembling those of true hysteria but for which some organic or functional other affection is responsible. He describes six cases to show the necessity for being alert to detect this hysteroid syndrome and to interpret it aright. In two of the cases the course confirmed that the supposed hysteria was incipient dementia praecox. In another case manic-depressive insanity of the melancholia type began with symptoms suggesting hysteria, such as sensory disturbances, anesthesia of eyeballs and pharynx, attenuation of the pharynx reflex, and ideas of negation which suggested simulation, but there were no hysterogenous zones. In another case of apparently typical hysteria, necropsy disclosed a brain tumor. The tendency to a childish point of view was marked in this case, but puerilism is a feature of hysteria as well as of some brain tumor cases. Alcoholism may also induce a hysteroid set of symptoms as in a case described in which hysteria had been diagnosed from the paresthesia, from the *automatismo ambulatorio*, absence of the pharynx reflex, and the occasional hallucinations with a vague persecution tinge, and lapses of memory.

Roentgen Treatment of Uterine Fibroma.—Weil remarks that no one thinks of holding modern surgery responsible for the mishaps before the asepsis era. But many medical men still hold aloof from roentgen treatment of uterine fibromas on account of mishaps they have heard of occurring in the early days of roentgen work. He claims that F. de Courmelles of France was the first to report (Jan. 11, 1904) the application of the roentgen rays in this field, and time has demonstrated the value of cross-fire exposures from a dozen different points more or less. Each field is about 10 cm. and the distance from the anticathode is 20 or 22 cm. at least. He filters through aluminum at least 1 cm. thick, utilizing only the shortest possible waves of the Coolidge tube. His smallest dose is 10 H units of the hardest possible rays, with a 22 or 24 cm. spark. The chromometer gage is 11 Benoist. He marks each field with a demographic pencil and exposes each field once or twice, going over them all successively on consecutive days. Then he recommences the exposures after an interval of at least a month. The most puzzling problem is when to recommence the exposures. He usually gives four series of exposures, but after the first two he leaves an interval of at least five weeks. The course thus lasts six months, but the menopause becomes installed and the pains much improved during the second month. He cites Pfender's statistics showing that less than 2 per cent. of uterine fibromas display a tendency to malignancy, while the global mortality from operative treatment of uterine fibromas is at least 5 per cent. He reiterates that roentgen therapy should now be the rule and operations the exception for all uterine fibromas, even the painful and the hemorrhagic ones, except that easily removable pedunculated myomas and those of exceptionally rapid growth should be removed without delay.

The Stomach Mask of Gallstone Disease.—Soca emphasizes that the radiating pain from liver colic may extend to quite a distance, and at some of the remote points thus reached it may set up a set of secondary symptoms which are liable to mask the primary disturbance and mislead the physician. The most frequent and the most dangerous form is when the secondary phenomena occur in the stomach. Even experienced and cautious physicians often yield to suggestion in such cases as readily as a hysteric girl. The patient's statements deal only with the stomach, and his description of his symptoms may fit some well defined stomach affection. In short, Soca reiterates, when confronted with any painful stomach symptoms, do not pay any heed to the stomach until the liver can be definitely excluded. The phrenic and scapular tender points with biliary lesions are often misleading, as also the costal, the shoulder and the pancreatico-duodenal points. The gallbladder may not be tender on superficial examination, but if the finger is dug in deep, and the patient is told to breathe deep, in the midst of the inspiration the patient stops it short and makes an exclamation of pain. Soca calls this the *signo del grito*, as the patient utters a cry. Another instructive sign is elicited by holding up the liver from below, placing the hand just below the ribs, as the patient takes a deep inspiration. The diseased liver thus is compressed as the diaphragm descends, and an intense pain is felt throughout it. Soca has named this the *signo del torno* as the liver is thus held in a vise, as it were. He illustrates his remarks with numerous instructive case histories. One shows that pain in the scapular region, with nothing to be found in the pleura or lungs, should suggest liver disease. Periodical vomiting first gave the clue in some cases. In one case the liver colic took the form of typical tabetic gastric crises; in other cases the gastric mask simulated nervous motor dyspepsia or the clinical picture of simple gastric or duodenal ulcer. The gastric or duodenal pain of biliary origin may assume the true rhythmic type of simple ulcer for days at a time. Even hematemesis may occur from cholelithiasis alone. One woman of 54 nearly died from the recurring hematemesis but the stomach was found normal and the gallbladder full of stones. Ingestion of bismuth may relieve the gastric pains even when they seem to be due exclusively to the biliary apparatus.

Spontaneous Destruction of Cells in Cerebrospinal Fluids.—Bonaba found in the seventy-four specimens of fluid he examined that the leukocytes became all destroyed in from three to sixty-three days. Even within twenty-four hours the figure dropped from 392 to 6 in one case, regardless of the temperature. This spontaneous destruction seems to be a manifestation of the universal process of autolysis which occurs spontaneously in every organ kept absolutely aseptic, but he found that it could be prevented by changing the reaction of the fluid from alkaline to acid. Addition of 3 drops of acetic acid to each 5 c.c. cerebrospinal fluid has preserved the leukocytes in it in their original numbers and proportions for several months to date in all his tests. It also has a sterilizing action. The hemolysis of the red corpuscles proceeds as usual. Unless this precaution is taken at once after the puncture fluid is obtained, no reliance can be placed on the leukocyte count a few hours later. The amount of this spontaneous destruction varies in different cases. The drop was from 369 to 148 in one case of tuberculous meningitis in twenty-four hours. The details are given of the seventy-four cases and also of thirty-three cases of meningitis in which the leukocytes preserved in the spinal fluid have kept unmodified during the months since.

The Wassermann Reaction.—Scaltritti calls attention to the specific action and always identical constitution of the lipoids obtained with cadmium chlorid, especially lipoids from heart tissue, for use in the Wassermann test.

Anales del Inst. Modelo de Clín. Méd., Buenos Aires

July-December, 1918, 8, No. 2

*Pathogenesis of Gallstones. L. Agote.—p. 205.
High Laparotomy Star Incision. J. Arce.—p. 220.
Classification of Gastro-Intestinal Disease in Infants. J. C. Navarro. —p. 224.
Catalytic Action of Copper on Oxidation Processes. H. Damianovich. —p. 233.
Mechanism of Wassermann Reaction. E. Lorentz.—p. 239.
*Cholesterol in the Blood in Cholelithiasis. A. Galíndez.—p. 255.
*Fistulas from Peptic Ulcers. R. F. Vaccarezza.—p. 264.
*Pott's Disease in a Humpback. J. Arce and G. Zorraquín.—p. 283.
*Regeneration of Peripheral Nerves. L. Merzbacher.—p. 293.
*Cyanid Poisoning. H. Damianovich.—p. 306.
The Pericardiac Epithelium in the Cock. P. Rojas.—p. 311.
Modification of McBurney's Incision. A. Galíndez.—p. 322.
History of Transfusion of Blood. D. Dameno.—p. 323.

Pathogenesis of Cholelithiasis.—Agote emphasizes that while the gallstones develop only in the biliary apparatus, the symptoms from them appear principally in the gastro-intestinal apparatus. Liver colic, with or without obstruction of the bile ducts, is merely an additional episode and does not modify the clinical conception that the manifestations of cholelithiasis are gastro-intestinal on the whole.

Cholesterolemia in Cholelithiasis.—Galíndez tabulates the cholesterol content of the blood in large numbers of gallstone cases as well as in other patients. His final conclusions are that hypercholesterolemia is not constant in cholelithiasis, and that there does not seem to be any constant relation between the cholesterol content of the blood and of the bile. The age seems to influence the cholesterol content, possibly from the defective functioning of the endocrine system. His conclusions thus from 153 analyses are directly at variance with those of the French school in regard to the importance of hypercholesterolemia in gallstone disease.

Peptic Ulcers.—Vaccarezza tabulates the details of twenty-seven cases, including one from his own service, in which a peptic ulcer after gastro-enterostomy had entailed a fistula between the jejunum, stomach and colon. Eleven of the twenty-seven patients succumbed to peritonitis; no attempt at operating had been made in three of the fatal cases. In conclusion he recalls that ulcer of the jejunum was known twenty years before gastro-enterostomy was invented. It may occur spontaneously and be a primary lesion. There are cases on record in which the primary operation revealed an ulcer in both stomach and jejunum.

Pott's Disease in Congenital Kyphosis.—Arce and Zorraquín report a case which has broadened their conception of the efficacy of orthopedic treatment of Pott's disease. The kyphosis was of 92 degrees and this was corrected by 44 degrees and the paraplegia subsided. The "Albee implant" was 17 cm. long, with an angle of 136 degrees. The patient was an adult woman, and the seat of the implant showed trophic changes from the extinct tuberculous process. The implant and the technic were all that could be desired but the bed and asepsis were far from perfect. No plaster cast was used, merely four broad strips of adhesive plaster, 3 inches wide, two of them horizontal, two passing from the buttocks like suspenders over the shoulders, to the chest. The transverse strips pass just above and below the hump, and do not meet in front. The case is illustrated. The kyphosis modified the tuberculous vertebral process so that there was no pain nor stiffness but lax paraplegia developed and an abscess in the psoas. Only staphylococci were found in the abscess.

Regeneration of Peripheral Nerves.—Merzbacher has been continuing his experimental research on the degeneration and regeneration of peripheral nerves, and illustrates some of his specimens. They seem to open a new field for research on means to increase the vitality of a nerve, severed from connection with the trunk nerve, so that the peripheral stump escapes degeneration. He accomplished this by placing in contact with the stump triturated brain tissue. This seemed to maintain its vitality and aid materially in its regeneration. The severed and newly sutured peripheral nerve was invaginated in a segment of the jugular vein, taken from the same animal, and filled with triturated brain substance. This prevented the formation of a neuroma; the brain substance showed a tendency to prompt organization and numerous intact cylinder-axes and nerve sheaths were found later in the peripheral stump, demonstrating that part at least had escaped degeneration.

Potassium Cyanid Poisoning.—Damianovich's experiments apparently demonstrate that potassium cyanid forms quite a stable association with blood serum. Certain plant extracts likewise attenuate its activity.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

March, 1919, 2, No. 3

Rational Dietaries in General. J. G. Ocaña.—p. 129. Cont'n.
*Syphilitic Peribepatitis. T. Hernando.—p. 145.
Dipylidium Parasites of Human Intestine and in Domestic Animals. C. R. L. Neyra.—p. 153.

Syphilitic Liver Disease.—Hernando reports another case in which the symptoms from syphilitic perihepatitis had been ascribed for years to duodenal ulcer or other cause and everything done except the right treatment. The man of 48 recovered almost complete health and returned to business from which he had been debarred by his illness for several years. The first symptoms had been noted twelve years before and the disease had assumed a progressive course after seven years. During these last three years there had been fever, but the symptoms from the stomach, the hyperchlorhydria, the duodenal symptoms had completely misled the diagnosis, nothwithstanding brief intermittent jaundice. The ascites had plainly been due to compression from gummas. As these retrogressed under specific treatment, there was no further trouble from this or from the previous intolerable pruritus. The fever for three years had been almost daily and remittent, the temperature normal or subnormal in the morning and running up to 38.1 or 38.6 C., or even higher in the latter part of the day. Hernando is inclined to attribute this fever to the action of the syphilis toxin on the vegetative nervous system.

Brazil-Medico, Rio de Janeiro

May 10, 1919, 33, No. 19

*Medical Ethics. J. A. G. Fróes.—p. 145.
Epinephrin in Pediatric Practice. A. Galvani.—p. 147. Cont'n.

Medical Ethics.—This is Fróes' inaugural lecture in the clinical medicine course at Bahia. He says that he was impelled to select this theme by the report in the local lay press last year of a medical meeting in which dozens of vituperative epithets were exchanged; he quotes the long list. In the course of his aphorisms he remarks in regard to the tendency to charlatanism, "It was the original sin of the medicine of old; it is the shame and disgrace of the medicine of the day, and it is urgent to banish it from the medicine of tomorrow."

Medicina Ibera, Madrid

May 3, 1919, 7, No. 78

The Immovable Image and Psychanalysis. A. S. Herrero.—p. 81.
*Acid in Filtered Stomach Contents. A. T. López.—p. 82.
Traumatic Shock. E. Diaz y Gómez.—p. 85. Cont'n.

Acid in Filtered Gastric Contents.—López tested the gastric contents for acidity before and after filtering, and tabulates the findings in fifty cases. They show that the acid content is higher in the homogeneized gastric contents than when filtered. In four cases the difference in the total chlorhydria amounted to 1,204 and 1,105. There were only ten cases in which no difference was apparent in the free hydrochloric acid before and after filtering; in the others it amounted sometimes to as much as 0,730 and 0,708.

May 10, 1919, 7, No. 79

*Treatment of Leishmaniosis. F. F. Martinez.—p. 104.
Generalized Psoriasis. Sicilia.—p. 106.

Treatment of Leishmaniosis.—Martinez has had much experience with kala-azar in children and Oriental sore in adults, and here says that the efficacy of tartar emetic in treatment seems to be now established beyond all doubt. The urine and bowel movements should be supervised. The only mishap in his experience was an attack of severe diarrhea in one case, an actual antimony cholera. The usual dose is 3 cg.

of the tartar emetic, and the intervals between doses are from two to six days. He has found that the preferable method is to have three ampules, two containing each 2 c.c. of physiologic saline; the third ampule contains 3 cg. of the tartar emetic in 1 c.c. of twice distilled water. The injection is made in the vein at the elbow: first one of the ampules of saline, then the ampule of the tartar emetic, concluding by injecting the second ampule of saline. By this means the needle is rinsed out and none of the drug comes in contact with the tissues, as this is liable to induce an abscess. Improvement in kala-azar is evident by the second or third injection; the fever declines and the child recovers its appetite. By the end of the month, recovery is generally complete but he keeps up the injections of the antimony and potassium tartrate for a time.

Repertorio de Medicina y Cirugía, Bogotá

May, 1919, 10, No. 8

*Torsion of Ovarian Cysts. A. Fajardo.—p. 397.
*Transfusion of Blood after Hematemesis. J. Bejarano.—p. 406.
Treatment of Cerebrospinal Syphilis. E. Campo.—p. 416. Conclusion.

Torsion of Ovarian Cysts.—Fajardo emphasizes that the surgeon should always be prepared for any surprise when confronted with symptoms of torsion of the pedicle of an ovarian cyst. Immediate intervention should be the rule. The clinical picture is often mistaken for appendicitis, but the palpation of a tumor suggests preferably a median incision, as in a successful case described.

Transfusion of Blood.—Bejarano reports that he successfully tided a young woman past the danger of intense anemia from a bleeding gastric ulcer by transfusion of blood from a niece. He reiterates the importance in hospitals of preliminary testing of the blood, and states that the anticoagulating action of the citrate need not be feared in hemorrhage cases.

Revista Médica, Puebla, México

May 15, 1919, 1, No. 10

*Malaria and Mosquitoes in Mexico. E. Torres.—p. 217. Cont'n.
*Genital Prolapse at Delivery. J. J. Izquierdo.—p. 226.
Medical Ethics. (La inmoralidad médica reinante.) S. Ramirez.—p. 230. Conc'n.

Malaria in Mexico.—In this instalment of his article, Torres discusses with thirty-three illustrations the anatomy and biology of the mosquitoes found in Mexico that have been incriminated in the spreading of malaria.

Genital Prolapse at Delivery.—In the case illustrated by Izquierdo, during labor at term the uterus prolapsed suddenly and the vertex of the fetus presented at the os. The fetal heart beat could not be heard and amniotic fluid mixed with meconium was escaping. The rigid cervix seemed to be incapable of dilating further, and he delivered the living child by slitting the anterior cervix for 5 cm. on the median line, two hours after the total prolapse had occurred.

Revista Médica del Rosario

May, 1919, 9, No. 2

José Penna. J. B. Valdés.—p. 112.
*Chronic Intestinal Stasis. L. O. Zeno.—p. 118.
*Serotherapy. Ruben Vila Ortiz.—p. 166.
Megacolon. F. Chiossone.—p. 169.

Chronic Intestinal Stasis.—Zeno has been working with Lane in England and describes with numerous illustrations Lane's theories in regard to chronic intestinal stasis and its causes. He criticizes Lane's ideas, and presents arguments to the effect that the avascular bands are found in the majority of persons, and have no pathologic significance. The same is true of the vascular membrane, Jackson's membrane. This represents relics of the direct prolongation of the great omentum in fetal existence. In studying these bands and membranes we must not be misled by the multiplicity of names that have been conferred on them. The surgeon in particular should familiarize himself with the various aspects which these normal formations may assume. Zeno found the so-called duodenojejunal band in 60 per cent. of forty child cadavers, the ages ranging from 2 months to 10 years. He also noted that when the bismuth suspension reached the point of the angulation it seemed to slip through the kink as readily as through the wide lumen above. The bands do not always occur at points where they can by any possibility serve as supports, while they may be conspicuous by their absence at other points where they would certainly develop if Lane's theory were sound.

Serotherapy.—Ortiz protests against the custom in Argentina of dispensing antiserums in such small doses that fifty-six vials had to be used, for instance, in one case of tetanus, to give 84,000 units of antiserum. The small number of units per vial renders treatment unnecessarily expensive. He urges that ampules should be available containing 100 c.c. of the antiserum.

Revista de Medicina y Cirugía, Havana

May 10, 1919, 24, No. 9

Technic for Operative Treatment of Trachoma. R. Guiral.—p. 235.

Revista Médica del Uruguay, Montevideo

April, 1919, 22, No. 4

Case of Cicatricial Stenosis of the Esophagus. J. M. Alonso and E. Regules, Jr.—p. 291.
*Induced Pneumothorax. J. B. Morelli.—p. 293.
Psoriasis in Inherited Syphilis. J. Rosende.—p. 324.

Induced Pneumothorax.—Morelli sketches the history of induced pneumothorax and the experiences in various clinics. He insists that in spite of all the work that has been done, artificial pneumothorax is still in the formative period. Notwithstanding the remarkable results attained with it in some cases, there are still many obscure points in the mechanism of its action and in its applications, as well as inexplicable irregularities in its therapeutic results. By perfecting it further we may be able to multiply the "marvelous resurrections" which have been sometimes realized to date. Strict knowledge of all factors that enter into play in the organism during the application of the procedure will permit a more perfect adaptation of the pneumothorax to the organic conditions of each patient. The question is to obtain the maximum results with the minimum of disturbance.

Rev. Sud-Amer. de Endocrinología, etc., Buenos Aires

May 15, 1919, 2, No. 5

*Antagonism between Microbes. C. Spada, Jr.—p. 149.

Microbian Antagonisms.—Spada noticed that anthrax infection ran an exceptionally mild course in persons infected with staphylococci. Similar antagonisms between microbian infections has been noticed, he recalls, with malaria and tuberculosis, while malarial subjects are peculiarly susceptible to dysentery and smallpox. On the other hand, the malarial parasites disappear from the blood during intercurrent smallpox and, as Aynaud reports, during grave influenza. Spada's experimental work on guinea-pigs confirmed the attenuation of anthrax infection when the *Staphylococcus aureus* was inoculated subcutaneously along with the anthrax germs. The results were more striking with rabbits; one survived for thirteen days and none died in less than eighty hours. The injected staphylococci induce the formation of an abscess at the point of injection and the accumulation of leukocytes at the point aids in the defense. This assumption was confirmed by the negative results when the inoculation was done by the vein. The five rabbits in this group all died in about two days. Some other experiments were less conclusive, but anthrax bacilli cultivated in vitro with the diplostreptococcus isolated from cases of influenza, seemed to have their virulence utterly annulled.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

April 5, 1919, 1, No. 14

The Language of Medical Writings. III. A. Kluyver.—p. 1061.
Medical Education in England. G. van Rijnberk.—p. 1065.
*Metastasis with Cancer. W. M. de Vries.—p. 1068.
*The Misplaced Fear of Cachexia Thyreopriva. O. Lanz.—p. 1086.
Tennis Leg. E. H. van Lier.—p. 1088.
*Contusion of the Pancreas. J. M. van Dam.—p. 1091.

Metastasis with Cancer.—De Vries found cancer at 518 of 3,700 necropsies, and he here discusses the metastases found with them, and the frequency and distribution with different

types and locations of the cancers, and compares his findings with those on record. The liver cancers entailed metastasis in a surprisingly large proportion of the cases, and lung cancers in a surprisingly small proportion. The metastatic lumps are also at correspondingly opposite extremes in size with lung and liver cancers. He was impressed further with the frequency of metastases in bones, 53 out of the 518 cases, and the whole of the skeleton was not examined so that other instances of this may have escaped detection. In some cases there were multiple metastases in the skeleton, suggesting a blood-borne origin. Metastasis in the skeleton was noted in 7 of the 19 cases of mammary cancer and in 5 of the 19 cases of prostate cancer. There were only 2 cases of thyroid cancer in his material, but in one of these there was metastasis in the skeleton. The metastases develop readily also in the suprarenals and ovaries, but not in the spleen, heart and muscles. In 69 cases of cancer in the esophagus, metastasis occurred in the liver in 26 per cent., the larger proportion with low seated cancer. The longer survival with the latter may explain this. Mechanical factors alone are unable to explain metastasis with malignant disease, especially the preference for certain organs. The size of the cancer cells does not explain this either. Cancer cells probably circulate freely in the blood stream but die off readily. Chemical factors may aid in their destruction in certain organs in which metastasis seems to occur rarely. This suggests the possibility of treating cancer with extracts of these organs. Attempts in this line with spleen tissue and extract have given negative results to date as far as he knows. In Kaufmann's 1,078 cases of cancer (Basel) there was metastasis in the spleen in 8; in these the primary lesion was in the uterus, penis, thyroid, kidney, gallbladder or stomach. In Mielecki's 487 cases the frequency of metastasis in the skeleton with mammary and prostate cancer was as marked as in De Vries' Amsterdam cases (8 in 18 and 11 in 30). Comparison with other statistics confirms the greater prevalence of primary cancer of the thyroid in Switzerland, and of the lungs at Berlin, but with all the statistics the percentage of organs affected with metastasis is proportionately about the same. The fact that metastasis is so rare with cancers in the larynx and upper esophagus may be explained by the comparatively early fatal temination. The exemption of the muscles from metastasis, the exemption of the brain from metastasis with gastric cancer (no signs of metastasis in the brain in Kaufmann's 227 cases of gastric cancer and only in one of Mielecki's 156 cases), and the predilection of the liver, skeleton and suprarenals to metastasis are insoluble mysteries at present.

The Fear of Cachexia Thyreopriva.—Lanz emphasizes that surgical relief is imperative when a person with goiter has a hoarse voice, an aphonic cough, stridor or difficulty in inspiration when climbing stairs. Indications for operative measures are still more common with toxic disturbances, hyperthyreosis or dysthyreosis, and if sufficient of the excessively functioning gland is removed, he declares, a complete cure may be counted on even in extreme cases of exophthalmic goiter. General practitioners do not realize the full efficacy of operative treatment in such cases, while they have an exaggerated dread of cachexia thyreopriva. They do not realize that surgery has progressed far beyond the point of operations which permitted this to develop. Surgeons are able now to discriminate and to spare sound thyroid tissue, but general practitioners are still advising their exophthalmic goiter patients against an operation. Lanz reiterates that nowadays there is no reason for this; the collar incision leaves only an unnoticeable scar; part of the capsule is left, thus precluding injury of the recurrent nerve; the parathyroids are not molested and hence there is no danger of tetany, while enough thyroid tissue is always left so that cachexia thyreopriva is no longer encountered. Notwithstanding all this, surgeons still hear the same old story, "My doctor says this is a very dangerous operation," or "My doctor told me that this operation would make me an idiot." Even on the operating table, the question comes, "Are you sure that I won't turn into an idiot?" The trachea flattened by the goiter will resume its shape when the pressure has been removed, and the toxic symptoms will subside when the poison-generating tissue is no longer there to cause trouble. Practitioners generally should appreciate this, and should overcome their misplaced fear of cachexia thyreopriva.

Contusion of the Pancreas.—In van Dam's case the contusion was from the horn of a bull and the young man died about a month later, the pancreatic duct having been lacerated. The condition at first did not seem serious but laparotomy the third day showed the escape of pancreatic juice into the abdominal cavity through the foramen of Winslow, and into the bursa omentalis. Notwithstanding thorough drainage, symptoms of ileus developed and the man died the day after entero-anastomosis. Van Dam has found twenty-five cases on record of isolated open injury of the pancreas and sixty-two of isolated contusion of the pancreas. Trauma seems to be an important factor in the development of cystic disease of the pancreas.

Hospitalstidende, Copenhagen

May 21, 1919, 62, No. 21

*Roentgen Therapy of Cancer. T. Eiken.—p. 641.

Roentgen Therapy of Cancer.—Eiken reports from Rovsing's private clinic the complete cure of a woman of 46 who in the course of fifteen months had had a mammary carcinoma removed and also two recurrences at its site, and during the last six months had been having pains in the femur on that side, and a large metastatic tumor developed here. This tumor subsided completely under vigorous roengen treatment. The pains were relieved after the first application (30 H. through 6 mm. aluminum), and by the end of the month she could take a few steps without support. The results were as complete as with excision of the focus, but this treatment, as too often happens, was not applied until the malignant disease had invaded practically the whole body, and the patient succumbed to metastasis elsewhere. In another case a large mammary cancer subsided to a clinical cure under one exposure (50 H. 8 mm. aluminum, ninety minutes) with a second exposure after a month's interval. All his other patients succumbed sooner or later to metastases probably already installed.

Ugeskrift for Læger, Copenhagen

May 15, 1919, 81, No. 20

*Gastric Achylia; Treatment with Hydrochloric Acid. V. Bie.—p. 521.

Gastric Achylia; Treatment with Hydrochloric Acid.—Bie reports a case of gastric achylia with enteritis and anemia for many years, refractory to all treatment. The patient was a physician of 34, and Bie treated him with hydrochloric acid in doses large enough to supply the proper proportion for normal digestion. He gave at first 1 c.c. in 250 c.c. water once a day, increasing this gradually to 5 c.c. in 250 c.c. water and keeping up this dose at intervals for nearly three months. The acid was administered through a stomach tube, 6 mm. in diameter. The effect on the enteritis was prompt and decisive, and by the fourth month the patient had recovered his strength and was able to resume his practice. There was no doubt that the cure of the enteritis and the anemia was the result of the hydrochloric acid treatment, administered in doses larger than are usually given. In conclusion, Bie remarks that the advantage of kefir treatment in pernicious anemia may be due to the lactic acid in it which supplies the lacking acid in the stomach to a certain extent. It might be feasible to give hydrochloric acid with it. This treatment is not suited, of course, for all cases of gastric achylia, just as kefir has not always a favorable action in pernicious anemia. It might be advisable to give it a trial at least in every case. He tabulates the dates of the treatment in his case. The hydrochloric acid was not given every day, only nine times in the first month and six times in the second month, the doses ranging from 1 to 8 c.c. of the acid in from 250 to 500 c.c. of water. The aim was to provide the acid in the same amount and fluid contents as in the natural reaction. The stomach secretes a 4 or 5 per thousand solution of the acid which corresponds to a dilution of the hydrochloric acid of the pharmacy of about 1:50. The acid was given fasting once a day.